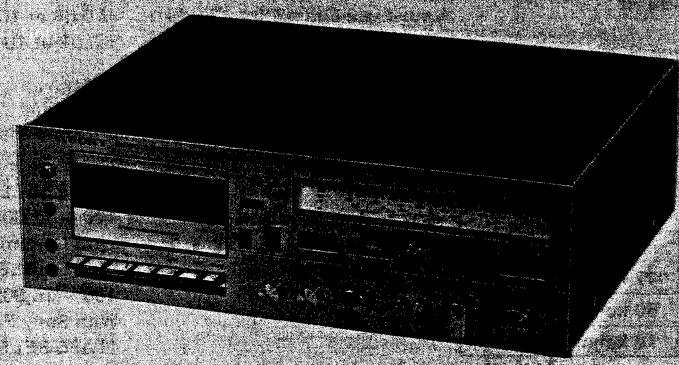
HST-89A

AEP Model
UK Model



STEREO CASSETTE RECEIVER

SPECIFICATIONS

GENERAL

Power Requirements:	240 V ac, 50 Hz (UK model) 220 V ac, 50/60 Hz (AEP model)
Power Consumption:	140 W
Dimensions:	Approx. 455 (w) x 147 (h) x 376 (d) mm 17 7/8 (w) x 5 3/4 (h) x 14 3/4 (d) inches including projecting parts and controls
Weight:	Approx. 9.65 kg, 21 lb 5 oz (net) Approx. 12 kg, 26 lb 7 oz (in shipping carton)

FM TUNER SECTION

Antenna:	300 ohm balanced 75 ohm unbalanced
Tuning Range:	87.5 – 108 MHz
Intermediate Frequency:	10.7 MHz
Usable Sensitivity:	3.5 μV (10.7 dB), IHF 2.2 μV (6.8 dB), S/N = 30 dB
Image Response Ratio:	40 dB
IF Response Ratio:	60 dB
AM Suppression Ratio:	40 dB
Capture Ratio:	2 dB
S/N Ratio:	65 dB
Selectivity:	50 dB
Harmonic Distortion:	at 400 Hz 0.8 % (MONO) 1.0 % (STEREO)
Frequency Response:	50 – 15,000 Hz ±3 dB
Separation:	Better than 40 dB

SW, MW and LW SECTION

Antenna:	LW, MW: Built-in ferrite-rod antenna External antenna terminal SW: External antenna terminal
Tuning Range:	LW: 150 – 350 kHz MW: 530 – 1,605 kHz SW: 5.8 – 15.8 MHz (49 – 19 m)
Intermediate Frequency:	468 kHz (UK model) 455 kHz (AEP model)

'Dolby' and the double-D symbol are the trade marks of Dolby Laboratory Inc. Noise reduction system manufactured under license from Dolby Laboratory Inc.

– Continued on next page –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY®
SERVICE MANUAL

HST-89A

Sensitivity: LW: 55 dB/m (562 μV/m), built-in antenna
200 μV (46 dB), external antenna
MW: 48 dB/m (251 μV/m), built-in antenna
35 μV (30.8 dB), external antenna
(S/N = 20 dB)
SW: 30 μV (29.5 dB), external antenna
(S/N = 20 dB)

S/N Ratio: 55 dB

Harmonic Distortion: 1 % at 400 Hz

Headphones: Accepts headphones of 8 ohms or more (stereo binaural jack)

Speaker: Accept speakers of 8 ohms or more

Frequency Response: PHONO: RIAA curve ± 2 dB
TAPE: 40 – 20,000 Hz ± 1 dB
MIC: 50 – 25,000 Hz ± 3 dB

Tone Controls: BASS: ± 10 dB at 100 Hz
TREBLE: ± 10 dB at 10 kHz

Loundness Control (att. 30 dB): +10 dB at 100 Hz
+ 3 dB at 10 kHz

AMPLIFIER SECTION

Continuous RMS Power Output: (less than 1.0 % THD) Both channels driven simultaneously.
At 1 kHz
25 W + 25 W (8 ohms)

Music Power: 90 W (8 ohms)

Inputs:

	sensitivity	impedance	S/N
PHONO (phono jacks)	3 mV (–48 dB)	47 kohms	60 dB
TAPE (phono jacks)	440 mV (–5 dB)	50 kohms	70 dB
MIC (phono jacks)	0.775 mV (–60 dB)	10 kohms	55 dB

Outputs:

	output voltages	impedance
REC OUT (phono jacks)	250 mV (–10 dB)	10 kohms

CASSETTE RECORDER SECTION

Track: 4-track 2-channel stereo

Frequency Response: With regular cassette
(TAPE SELECT switch: NORMAL)
100 – 12,000 Hz
With Chromium dioxide cassette
(TAPE SELECT switch: CrO_2)
100 – 15,000 Hz
With Sony Ferri-Chrome cassette
(TAPE SELECT switch: Fe-Cr)
100 – 15,000 Hz

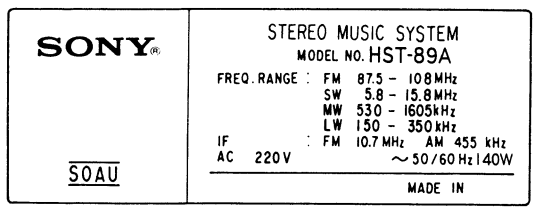
S/N Ratio: 50 dB (DOLBY NR: OFF)

Wow and Flutter: Less than 0.1 % WRMS

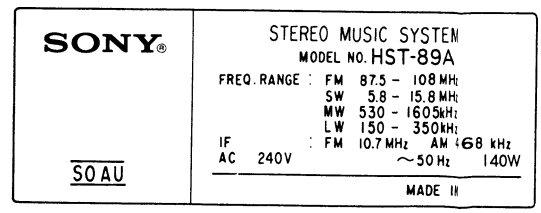
• MODEL IDENTIFICATION

– Specification Label –

AEP model

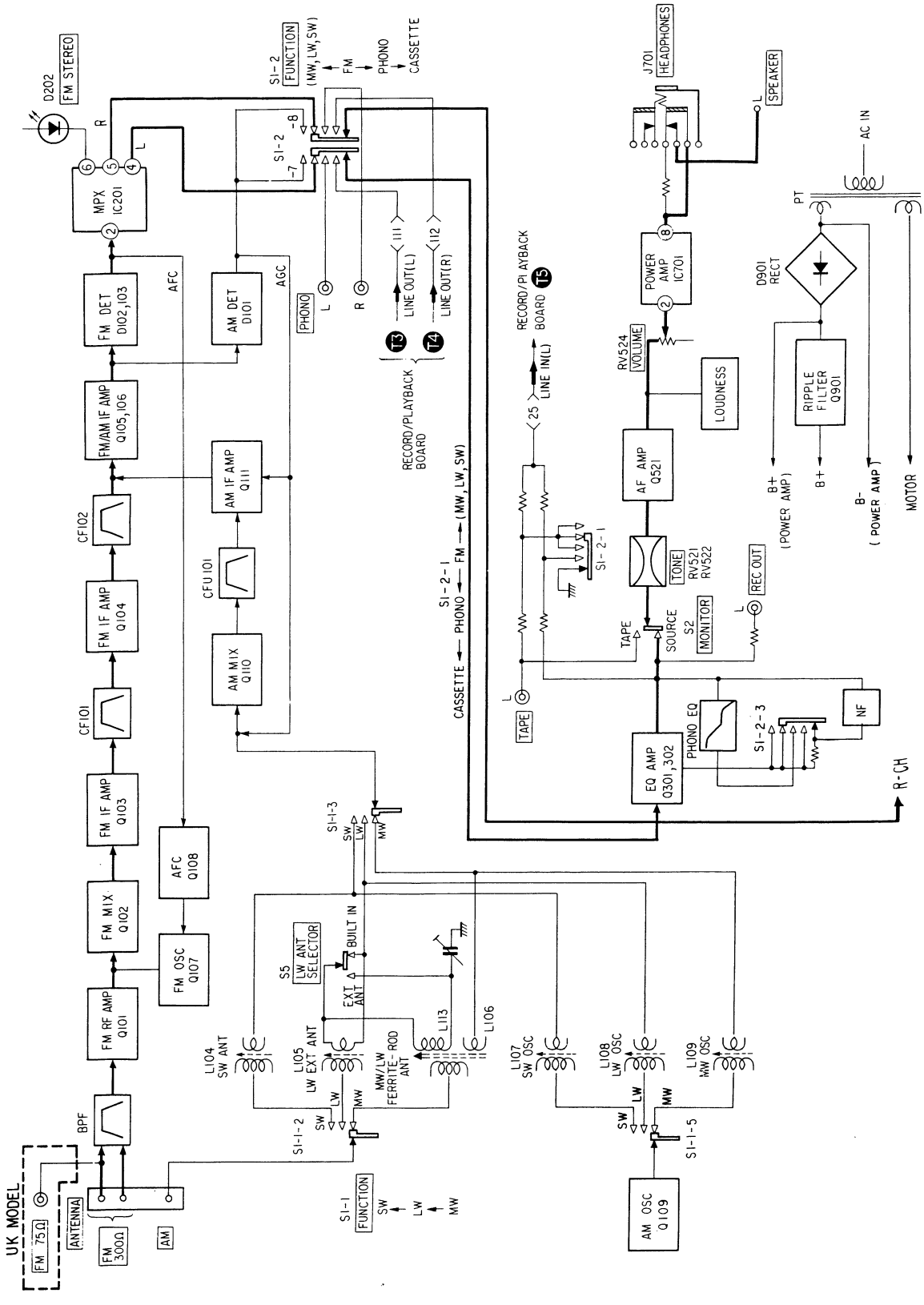

SONY
SOAU
STEREO MUSIC SYSTEM
MODEL NO. HST-89A
FREQ. RANGE : FM 87.5 - 108 MHz
SW 5.8 - 15.8 MHz
MW 530 - 1605 kHz
LW 150 - 350 kHz
IF : FM 10.7 MHz AM 455 kHz
AC 220 V ~50/60 Hz 140W
MADE IN

UK model


SONY
SOAU
STEREO MUSIC SYSTEM
MODEL NO. HST-89A
FREQ. RANGE : FM 87.5 - 108 MHz
SW 5.8 - 15.8 MHz
MW 530 - 1605 kHz
LW 150 - 350 kHz
IF : FM 10.7 MHz AM 468 kHz
AC 240 V ~50 Hz 140W
MADE IN

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM

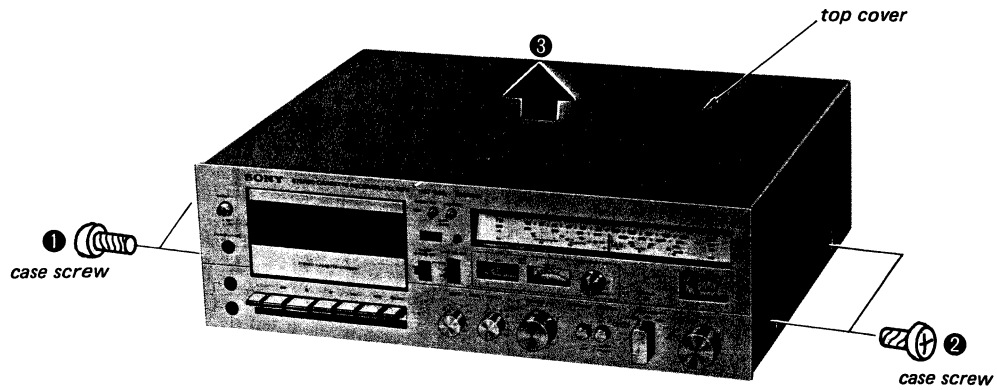


SECTION 2
DISASSEMBLY

2-1. REMOVAL

- Follow the disassembly procedure in the numerical order given.

TOP COVER REMOVAL

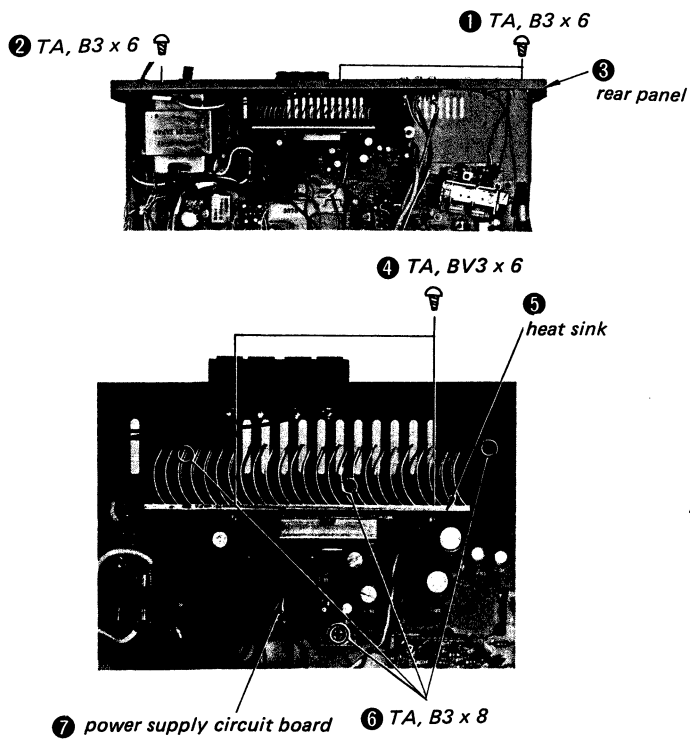


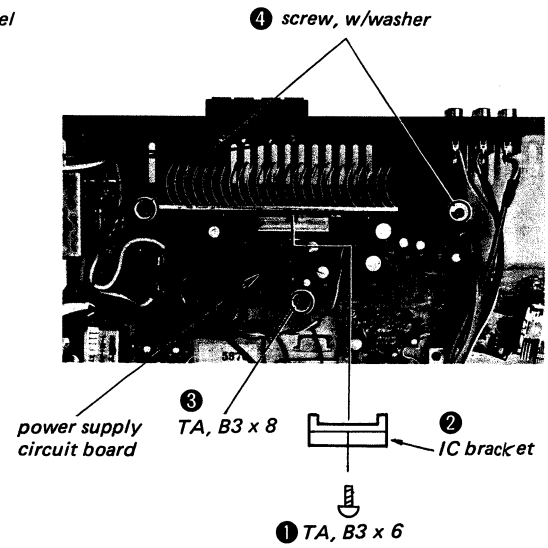
Dial Cord Stringing
• *See page 7.*

POWER SUPPLY CIRCUIT BOARD

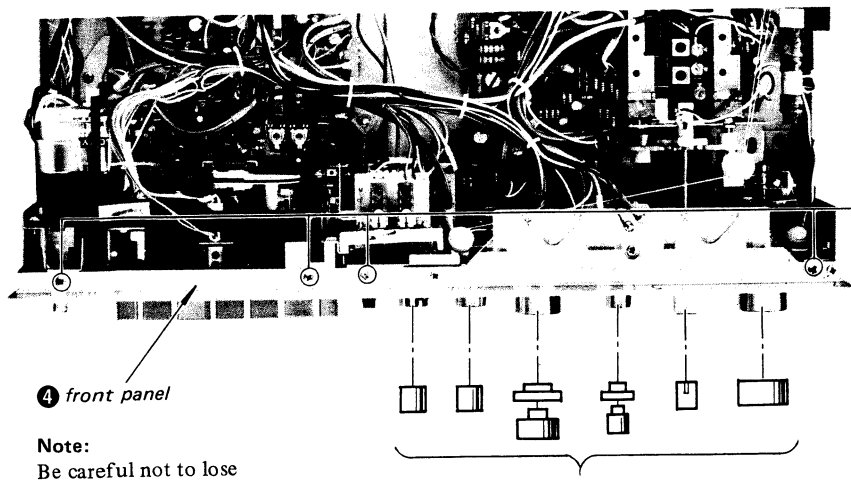
1) Remove the power supply circuit board with heat sink.

2) Remove the power supply circuit board only.





FRONT PANEL REMOVAL

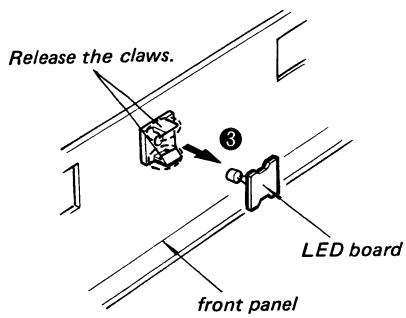


❷ *Remove seven screws (TA, B3 x 6) (top and bottom)*

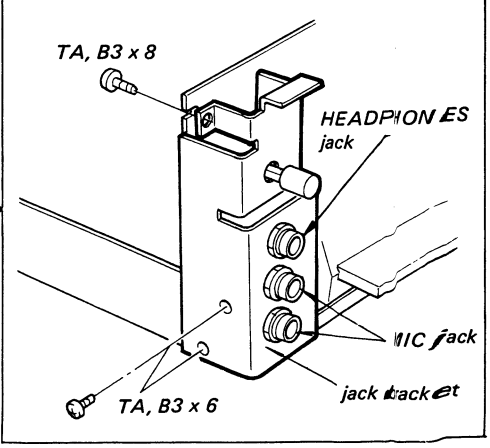
❹ *front panel*

Note:
Be careful not to lose the LIMITER knob.

❶ *Pull off eight knobs. TUNING, FUNCTION, REC LEVEL, VOLUME, TREBLE, BASS*



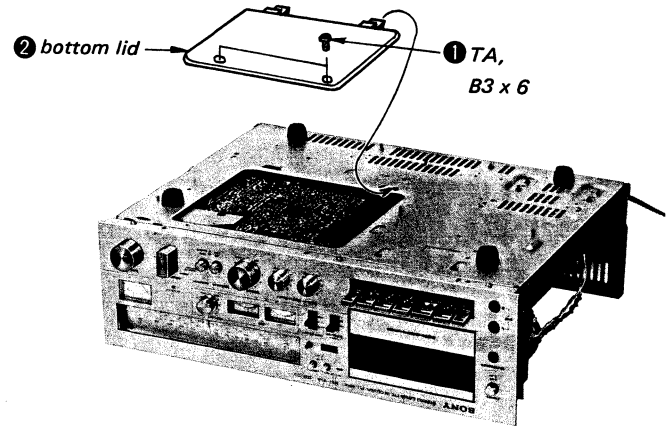
JACK BRACKET REMOVAL



HST-89A

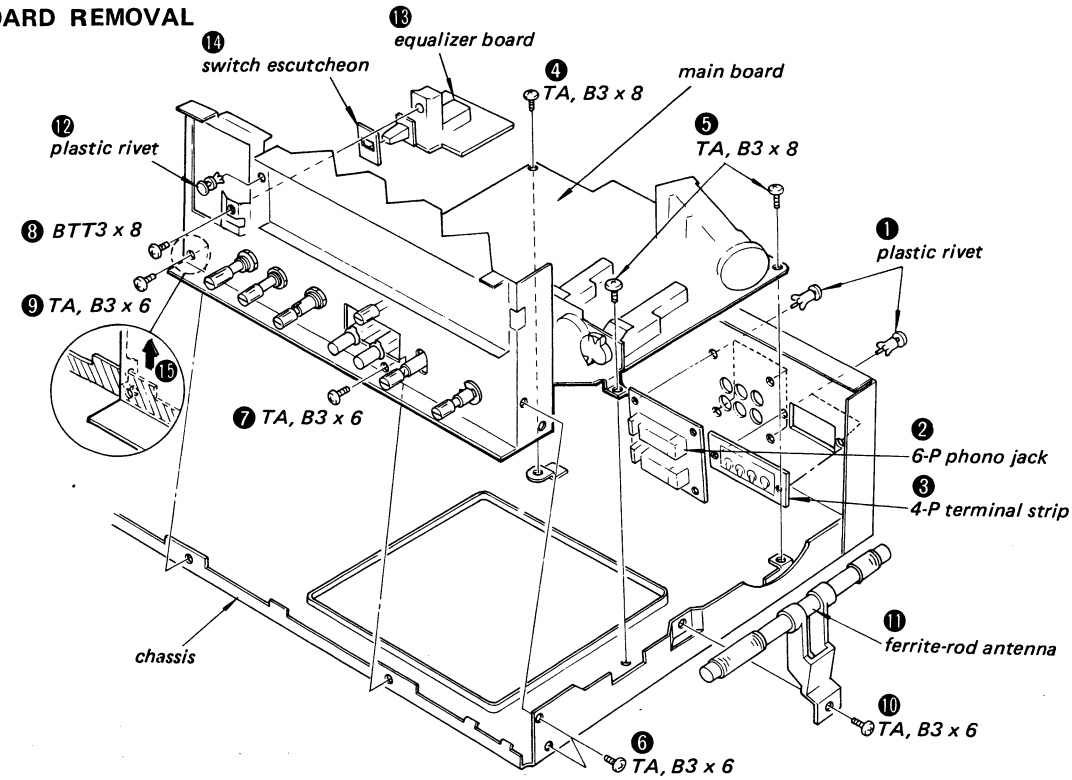
RECEIVER

BOTTOM LID REMOVAL

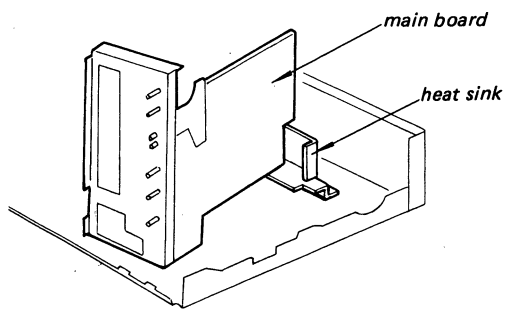


Note:
After removing the bottom lid, the main board can be almost checked. (Refer to page 15, 16.)
If necessary, remove the main board.

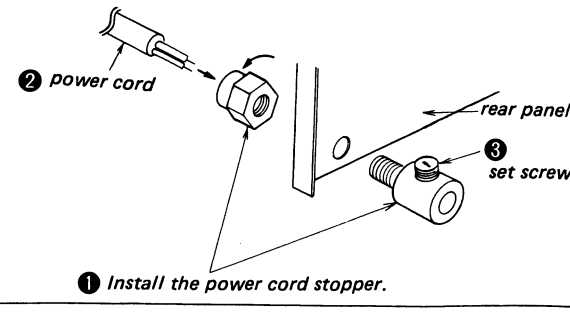
MAIN BOARD REMOVAL



- *For checking the main board, set the main board as shown below.*



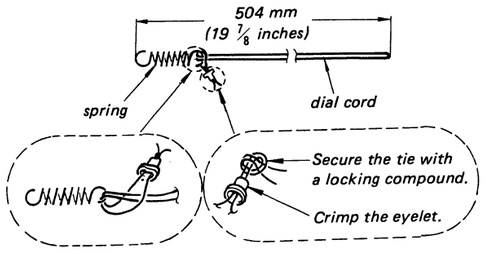
INSTALLATION THE POWER CORD



HST-89A RECEIVER

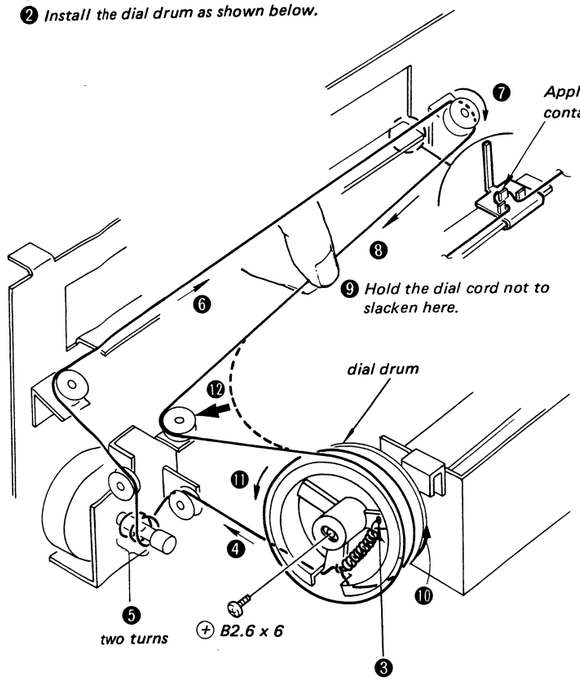
2-2. DIAL CORD STRINGING

1) Preparation

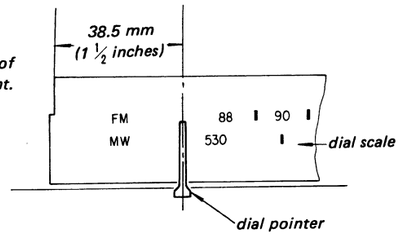


2) Stringing

❶ Turn the tuning capacitor shaft fully clockwise.
❷ Install the dial drum as shown below.



⓭ Turn the tuning shaft fully counterclockwise.
⓮ Install the dial pointer as shown below.



SECTION 3
ADJUSTMENTS

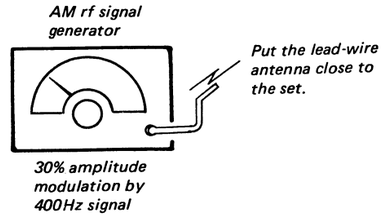
3-1. ELECTRICAL ADJUSTMENTS

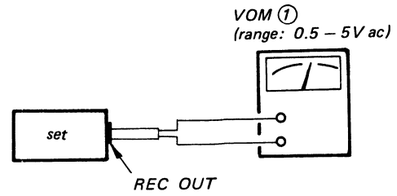
Setting:

TONE control:	"0" position
VOLUME control:	mechanical-mid position
LOUDNESS switch:	OFF position
MONITOR switch:	SOURCE position

MW SECTION

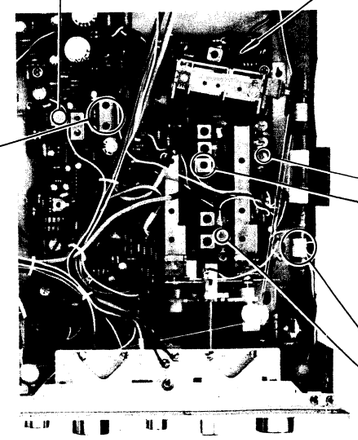
FUNCTION switch: MW





- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

IFT102
(no adjustment is needed)



AM IF ALIGNMENT	
Adjust for a maximum reading on VOM ①.	
455kHz (468kHz)	CFU101

( ): UK model

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM ①.	
CT109	1680kHz
L109	520kHz

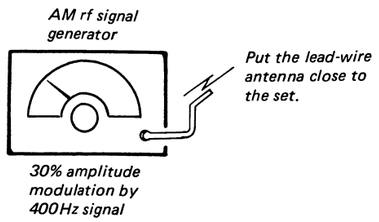
MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM ①.	
L106	620kHz
CT106	1400kHz

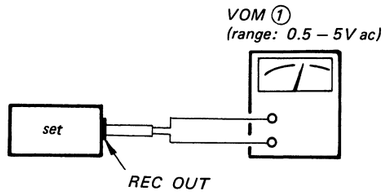
LW and SW SECTION

FUNCTION switch: LW or SW

- LW frequency coverage and tracking 1 adjustments

LW antenna selector switch: BUILT IN ANT

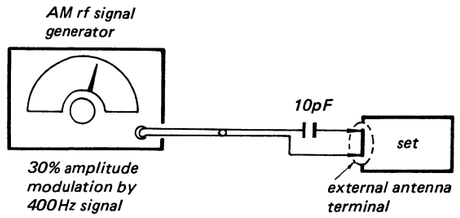




- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

- LW tracking 2 and SW adjustments

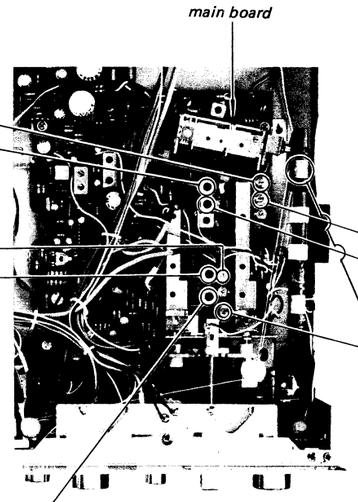
LW antenna selector switch: EXT ANT



SW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM ①.	
16.1MHz	CT107
5.5MHz	L107

16.1MHz	CT104
5.5MHz	L104
Adjust for a maximum reading on VOM ①.	
SW TRACKING ADJUSTMENT	

LW TRACKING ADJUSTMENT 2	
1) LW antenna selector (S5): (bottom view) EXT ANT position	
2) Adjust for a maximum reading on VOM ①.	
170kHz	L105

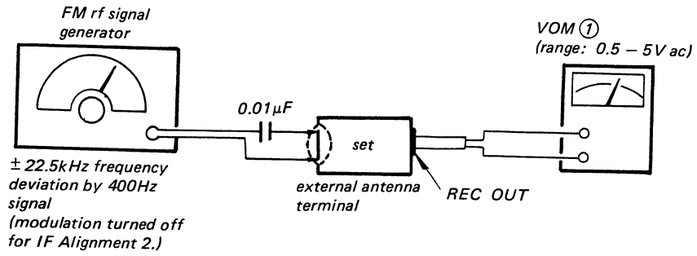


LW FREQUENCY CEVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM ①.	
CT108	365kHz
L108	145kHz

L113	170kHz
CT105	310kHz
1) LW antenna selector (S5): (bottom view) BUILT IN ANT position	
2) Adjust for a maximum reading on VOM ①.	
LW TRACKING ADJUSTMENT 1	

FM SECTION

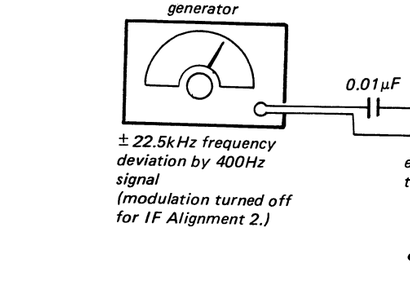
FUNCTION switch: FM

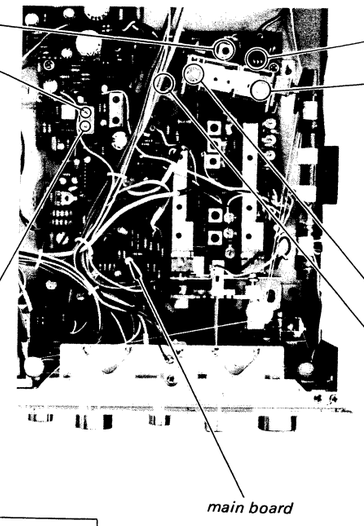


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

IFT101
IFT103 (primary side)
Adjust for a maximum reading on VOM ①.
FM IF ALIGNMENT 1 (10.7MHz with modulation)

FM IF ALIGNMENT 2 (10.7MHz with no modulation)
Adjust for 0V dc reading on VOM ②.
IFT103 (secondary side)





L101	87.1MHz (87.5MHz)
CT101	108.5MHz (108MHz)
Adjust for a maximum reading on VOM ①.	
FM TRACKING ADJUSTMENT	

( ): in West Germany

CT102	108.5MHz (108MHz)
L103	87.1MHz (87.5MHz)
Adjust for a maximum reading on VOM ①.	
FM FREQUENCY COVERAGE ADJUSTMENT	

( ): in West Germany

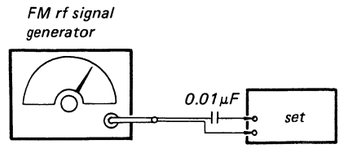
19 kHz ADJUSTMENT

Setting:

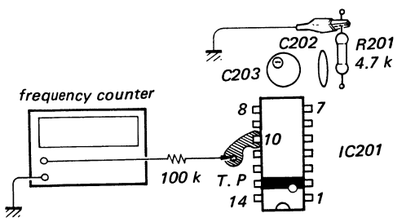
FUNCTION switch: FM

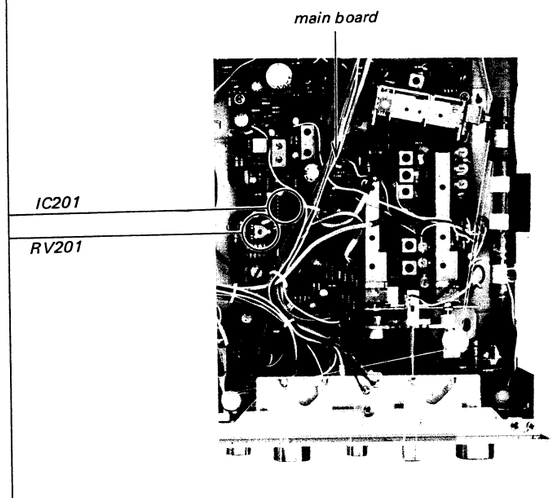
A) With Frequency Counter

Procedure:



Carrier frequency: *98 MHz*
Modulation: *no modulation*
Output level: *1 mV (60 dB)*



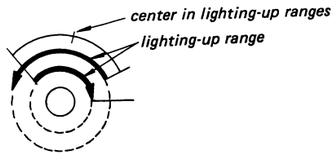


1. Tune the set to 98 MHz.
2. Adjust RV201 for 19kHz ±100Hz on the counter.

B) Without Frequency Counter

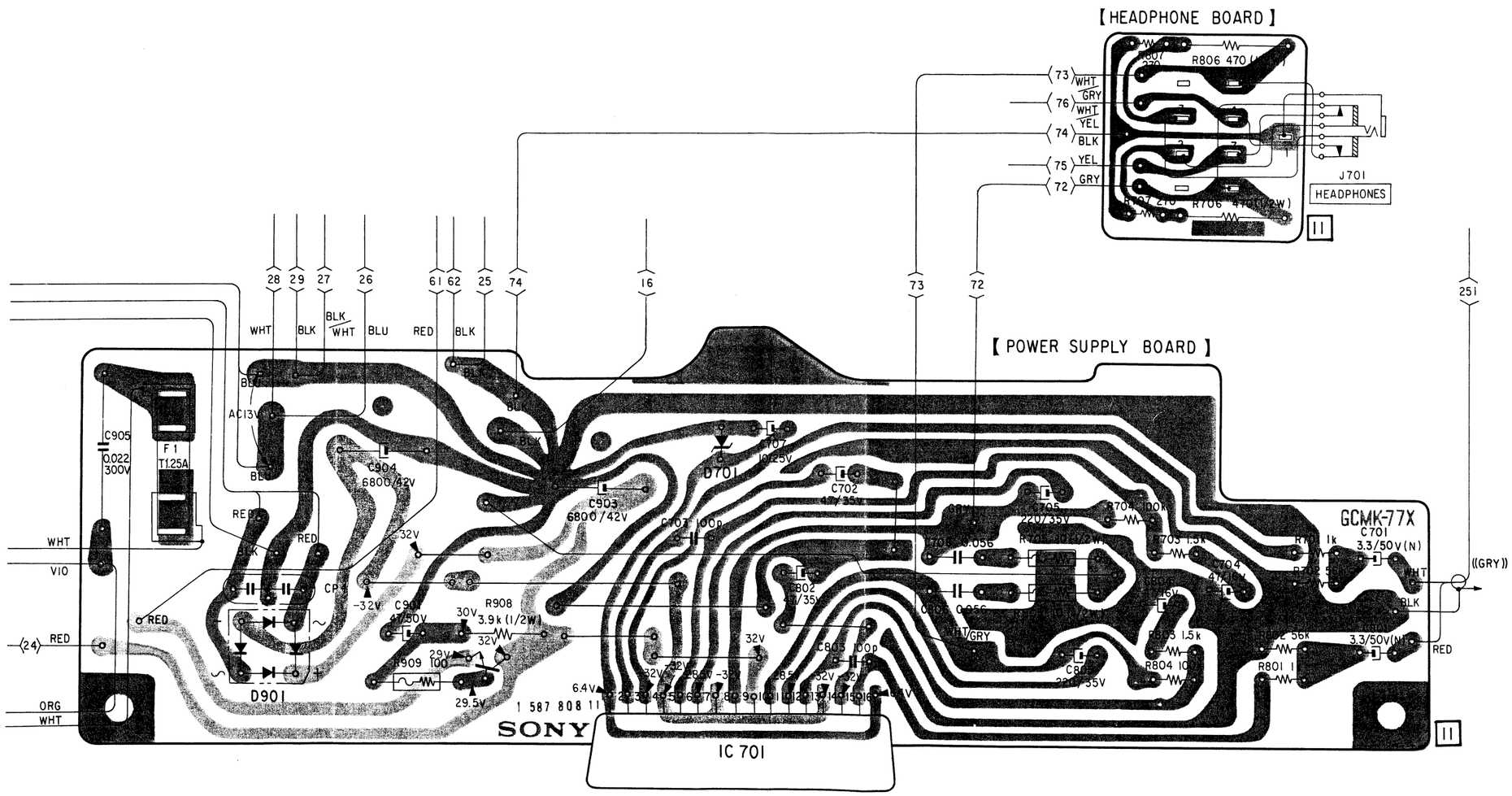
Procedure:

1. Tune the set to the FM stereo broadcasting signal.
2. Turn RV201 clockwise or counterclockwise and memorize the lighting-up range of stereo lamp.
3. Secure RV201 at the center in lighting-up range of both turns as shown below.



4-1. MOUNTING DIAGRAM — Power Supply Board —

— Conductor Side —

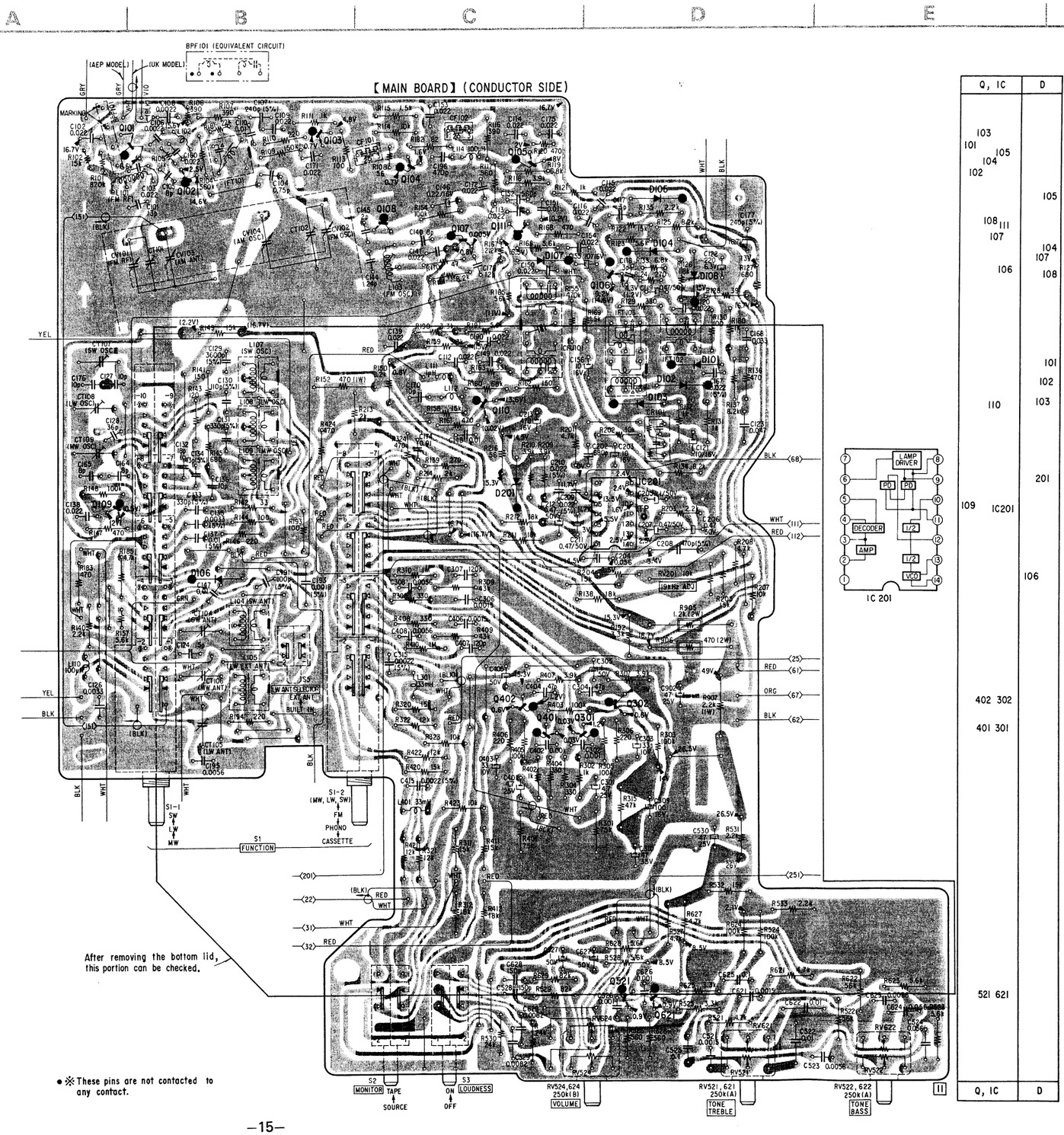


Note:

- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  ( ) : AM
  no mark: FM
- Voltage variations may be noted due to normal production tolerances.
- ▭ : B+ pattern.
- ▭ : B— pattern.

4-2. MOUNTING DIAGRAM –Main Board –

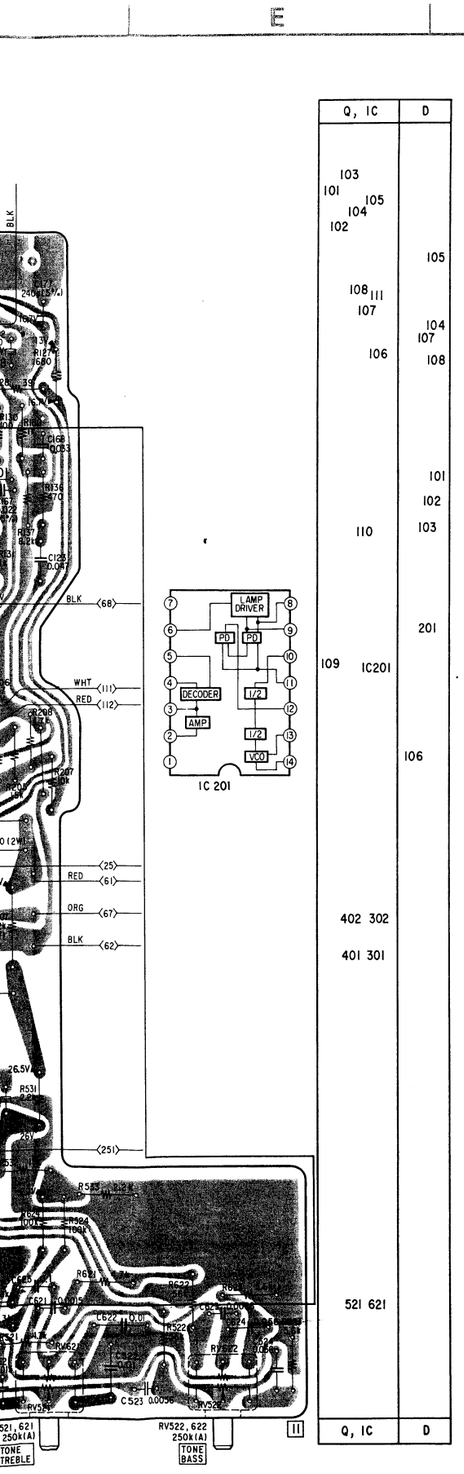
– Conductor Side –



Q, IC	D
103	
101 105	
104	
102	
	105
108 111	
107	
	104
107	
106	108
	101
	102
110	103
	201
109 IC201	
	106
402 302	
401 301	
521 621	

| Q, IC | D |

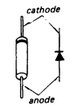
TP



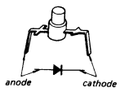
Replacement Semiconductors

For replacement, use semiconductors except in ( ).

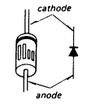
D101 – 103 : 1S1555
D106, 107
D104, 105 : 1T22AM



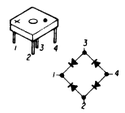
D202: SEL103R

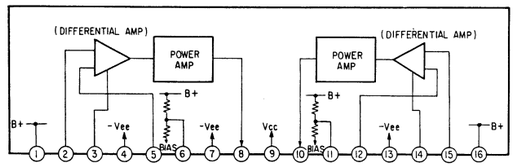


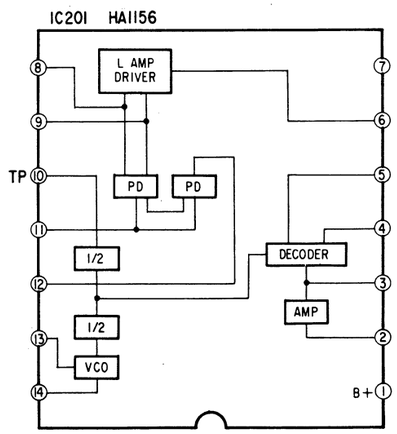
D108, 201: EQB01-15 (EQA01-15R)
D701: EQB01-07 (EQA01-07R)



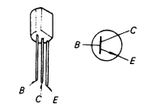
D901: S2VB20



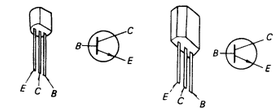




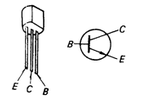
Q101 – 109: 2SC710



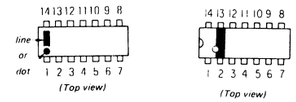
Q110, 111: 2SC403C
Q301, 401 (2SC403)
Q521, 621: 2SC1362 (2SC632A)
Q302, 402: 2SC1364 (2SC634A)



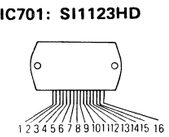
Q901: 2SC1475



IC201: HA1156W (HA1156)

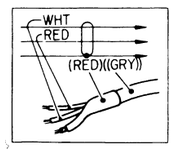


IC701: SI1123HD



Note:

- Color code of sleeving over the end of the jacket.



- : indicates side identified with part number.
- : B– pattern
- : B+ pattern
- Signal Path
  - : COMMON
  - : L-CH
  - : R-CH

  } FM signal
  - : COMMON
  - : L-CH
  - : R-CH

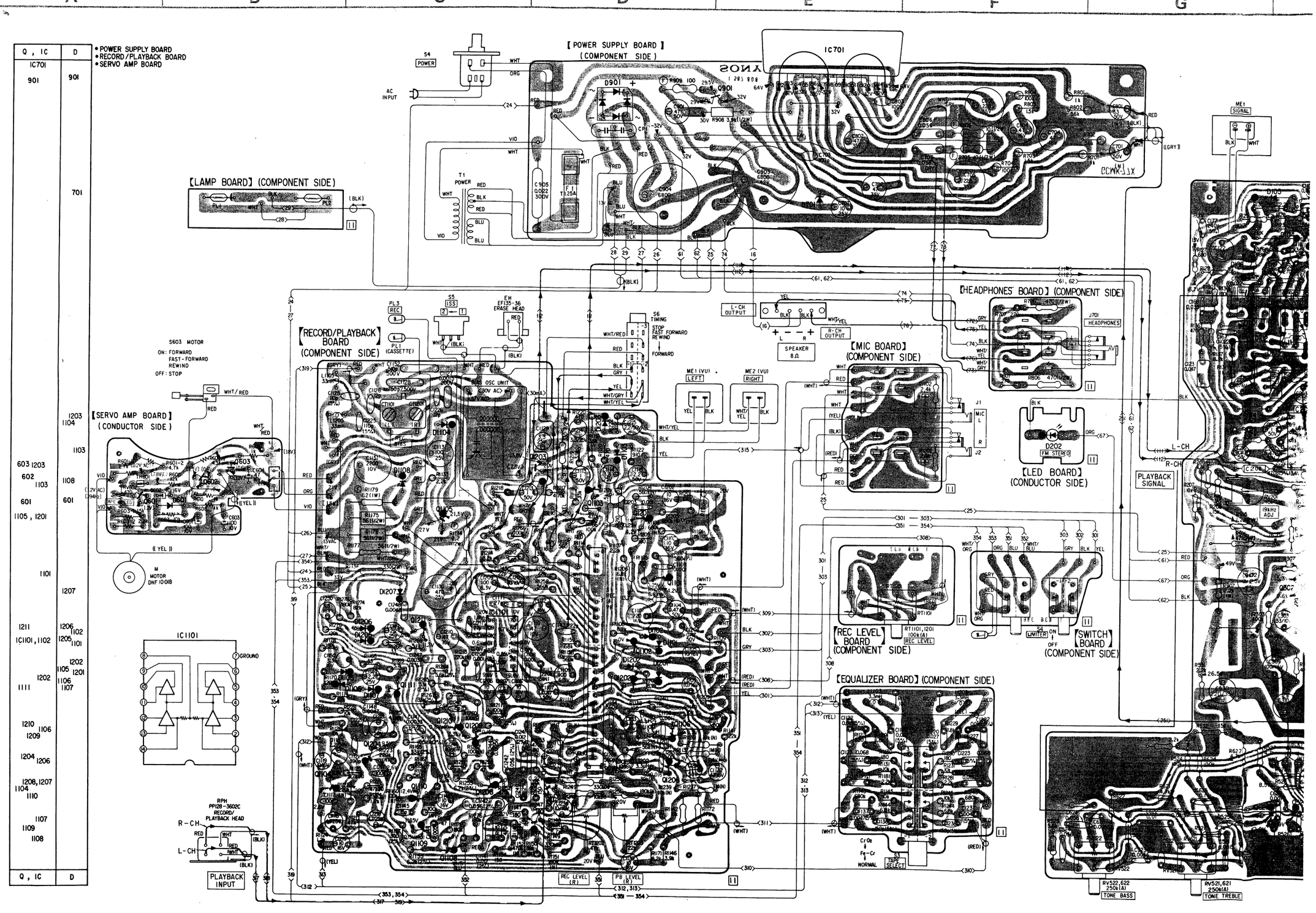
  } playback signal
- ▲ : nonflammable resistor.
- Ⓕ : fusible resistor.
- no mark: FM
- ( ) : AM
- [ ] : FORWARD
- < > : RECORD

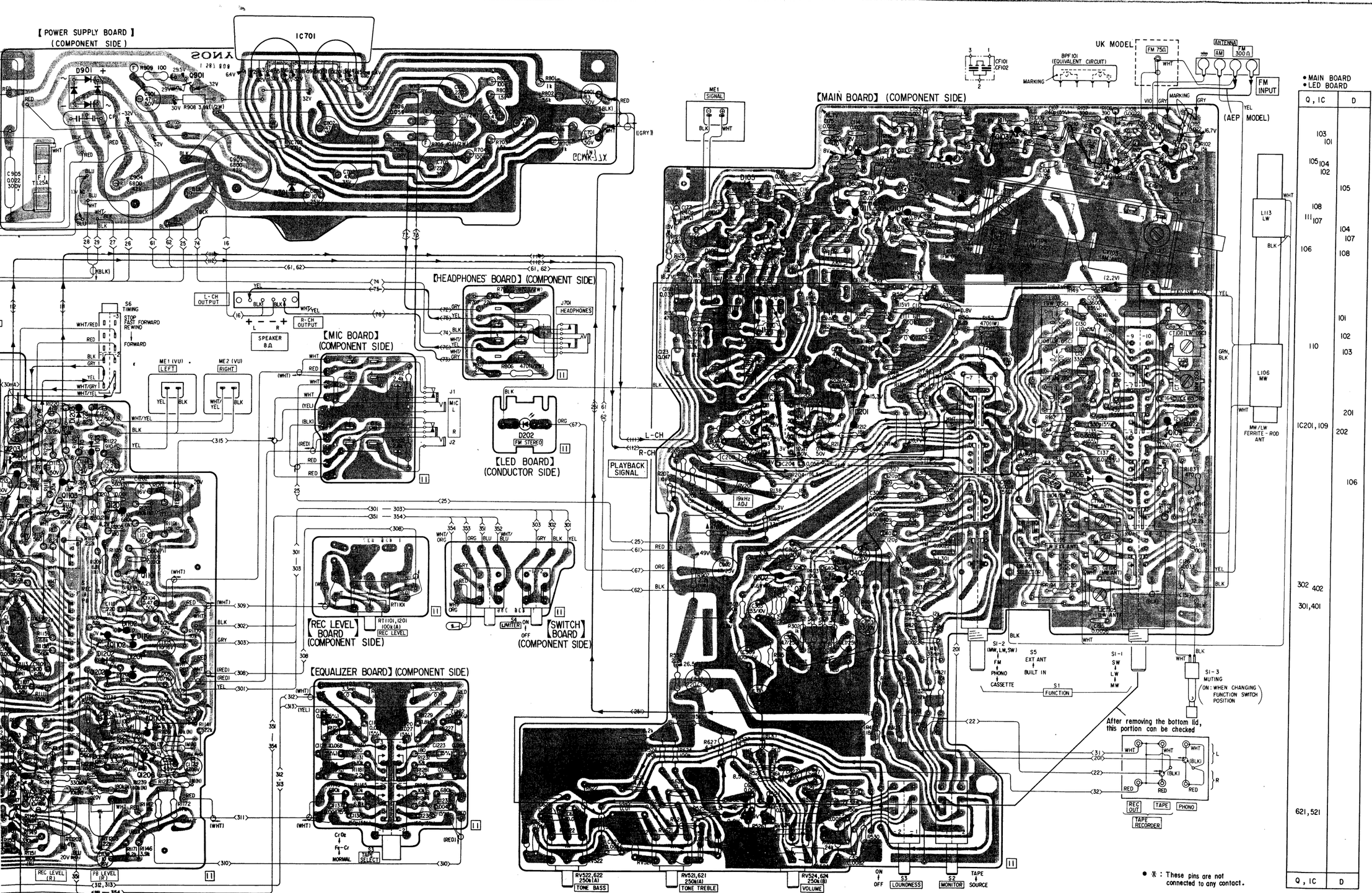
4-3. MOUNTING DIAGRAM

— Component Side —

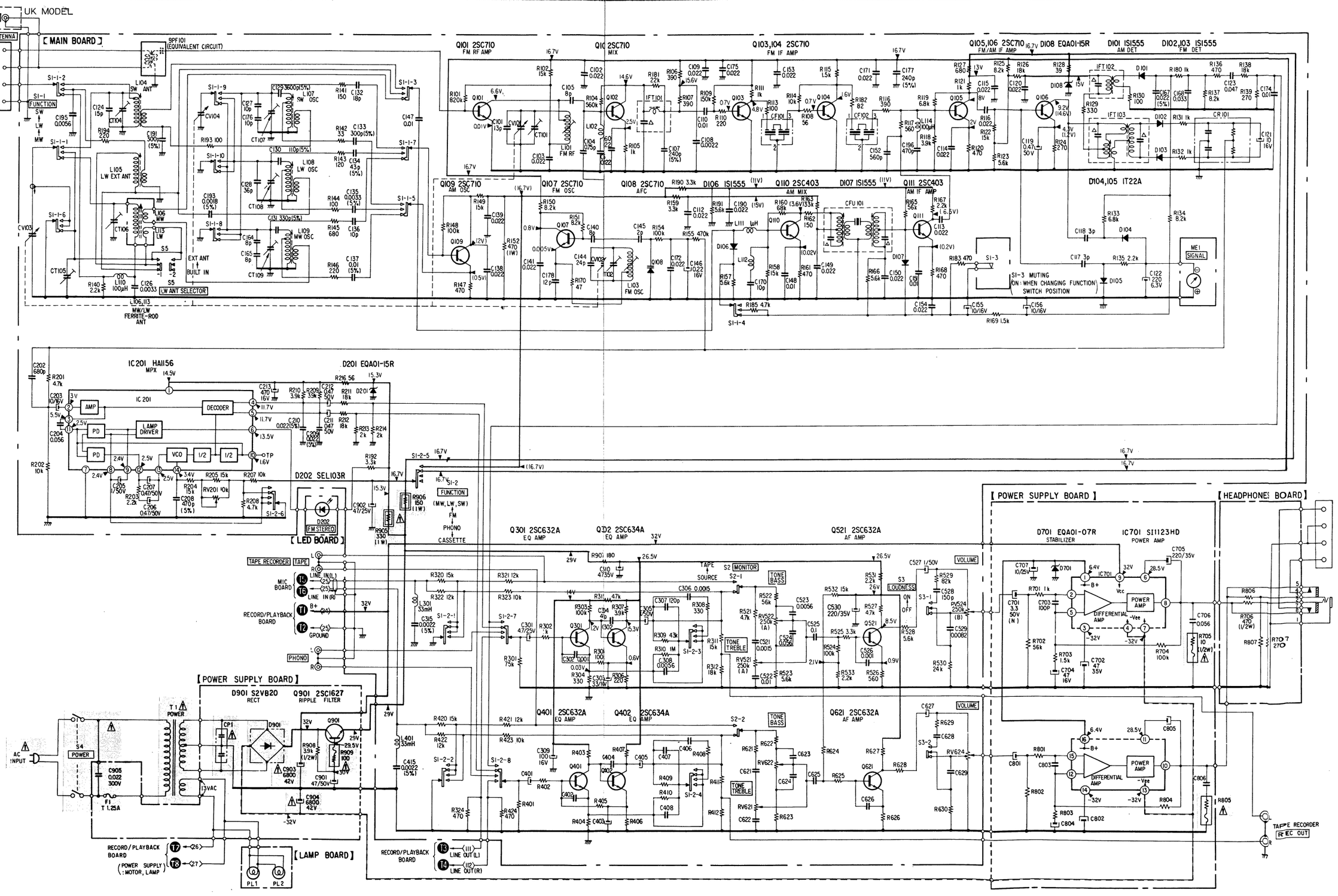
Note:
See page 42 to 46 for the following mounting diagrams and page 47 to 49 for the schematic diagram.

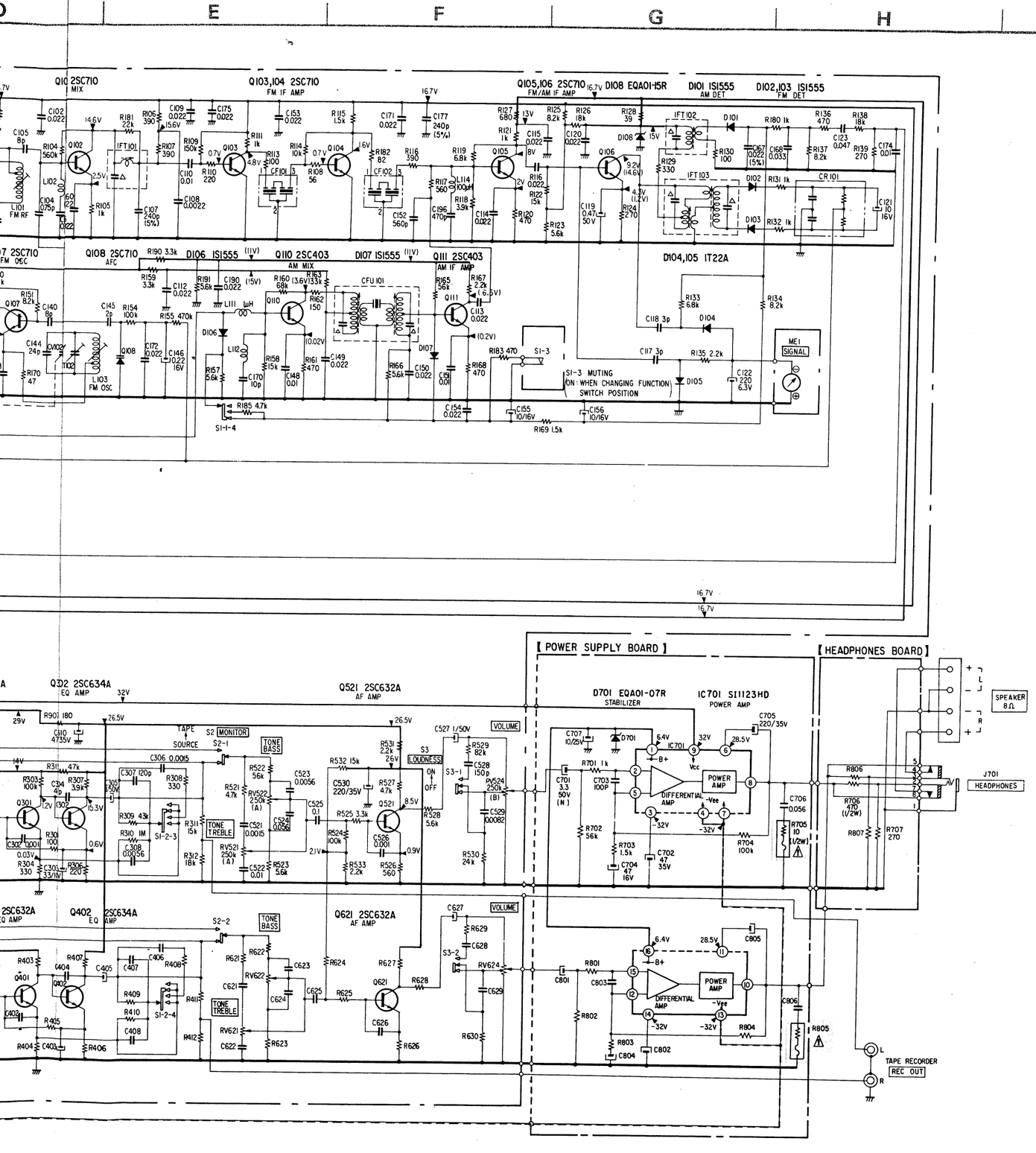
- SERVO AMP BOARD
- RECORD/PLAYBACK BOARD
- MIC BOARD
- REC LEVEL BOARD
- SWITCH BOARD
- EQUALIZER BOARD




【POWER SUPPLY BOARD】
(COMPONENT SIDE)
IC701
【MAIN BOARD】 (COMPONENT SIDE)
【HEADPHONES BOARD】 (COMPONENT SIDE)
【MIC BOARD】
(COMPONENT SIDE)
【LED BOARD】
(CONDUCTOR SIDE)
【REC LEVEL BOARD】
(COMPONENT SIDE)
【SWITCH BOARD】
(COMPONENT SIDE)
【EQUALIZER BOARD】 (COMPONENT SIDE)
UK MODEL
(AEP MODEL)
BPF101
(EQUIVALENT CIRCUIT)
SPEAKER 8Ω
L-CH OUTPUT
R-CH OUTPUT
PLAYBACK SIGNAL
TONE BASS
TONE TREBLE
VOLUME
LOUDNESS
MONITOR
TAPE RECORDER
After removing the bottom lid, this portion can be checked
• MAIN BOARD
• LED BOARD
Q, IC
D
• ※ : These pins are not connected to any contact.

4-4. SCHEMATIC DIAGRAM





Note:

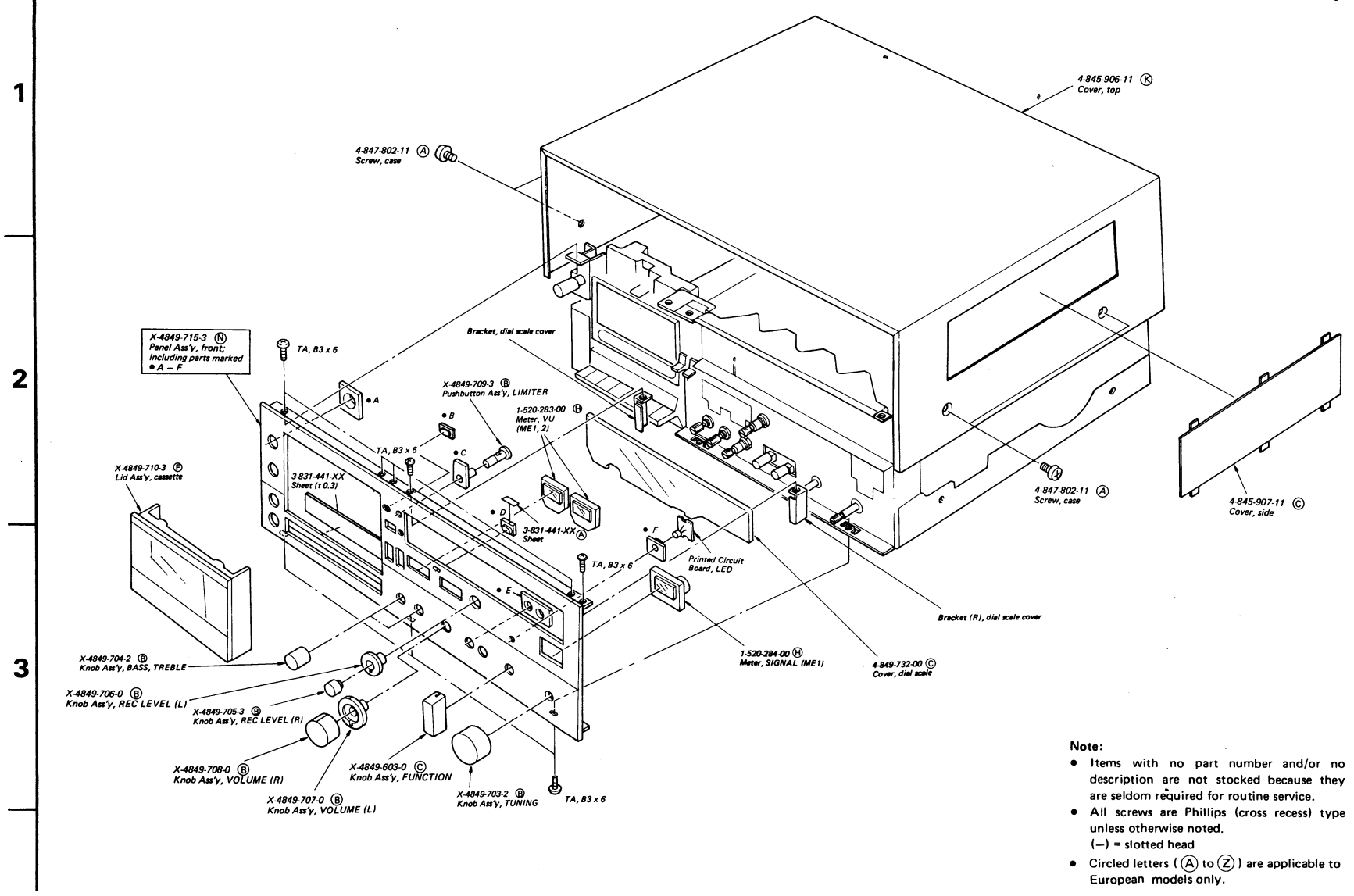
- All capacitors are in μF unless otherwise noted. pF=μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- : nonflammable resistor.
- : fusible resistor.
- (N) : low-noise resistor.
- 2% indicates component tolerance.
- △ : internal component.
- Transistor is used for Q108.
- ———: B– bus.
- ———: B+ bus.
- : panel designation.
- : adjustment for repair.

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  ( ) : AM
  no mark: FM
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S1-1-1 to 1-1-10	FUNCTION	MW
S1-2-1 to 1-2-8	FUNCTION	FM
S1-3	MUTING	OFF
S2-1, 2	MONITOR	SOURCE
S3-1, 2	LOUDNESS	OFF
S4	POWER	OFF
S5	LW ANT SELECTOR	BUILT IN

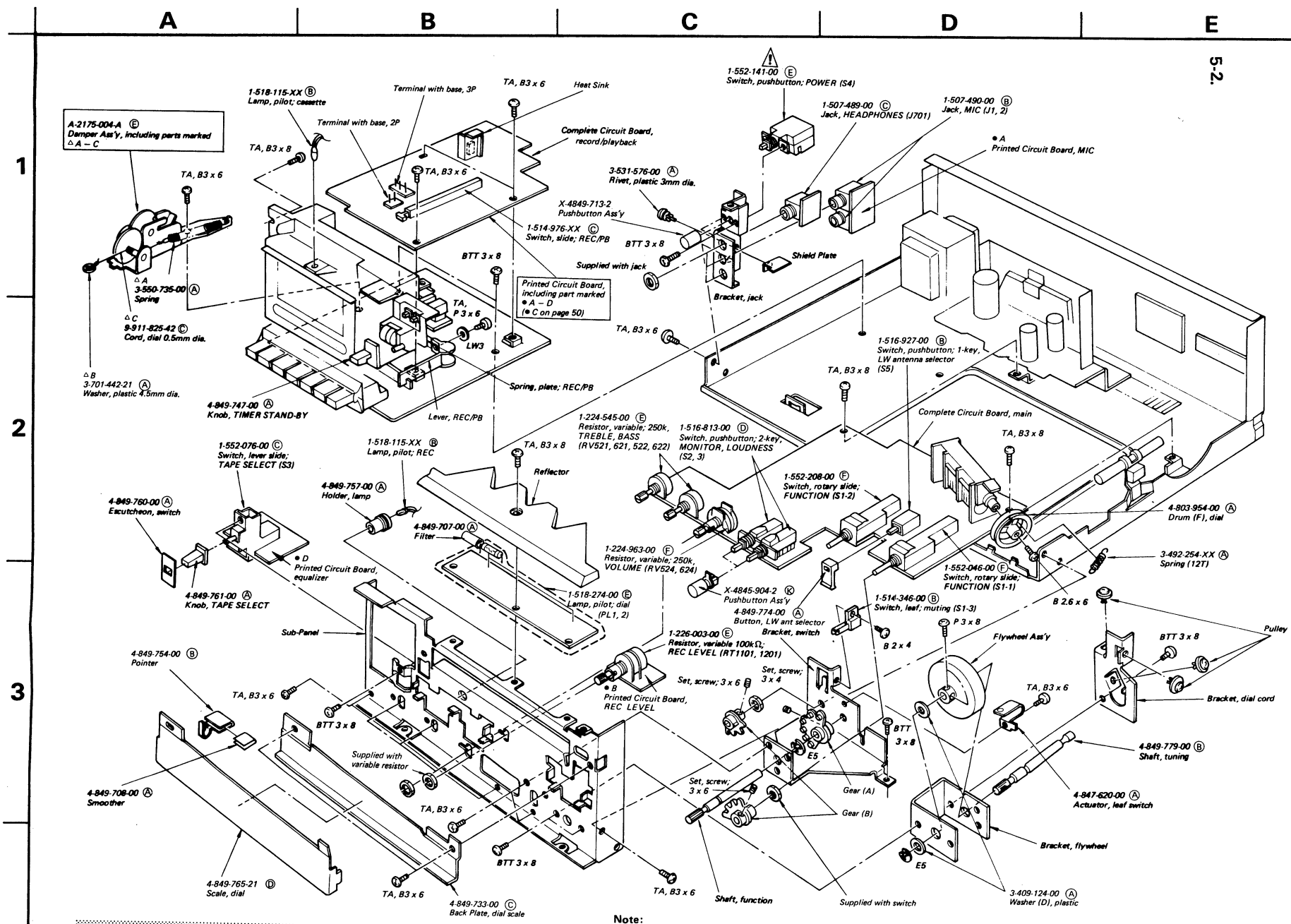
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 5
EXPLODED VIEWS


4-845-906-11 (K) Cover, top
4-847-802-11 (A) Screw, case
X-4849-715-3 (N) Panel Ass'y, front, including parts marked • A – F
TA, B3 x 6
Bracket, dial scale cover
X-4849-709-3 (B) Pushbutton Ass'y, LIMITER
1-520-283-00 (H) Meter, VU (ME1, 2)
X-4849-710-3 (F) Lid Ass'y, cassette
3-831-441-XX Sheet (t 0.3)
3-831-441-XX (A) Sheet
Printed Circuit Board, LED
Bracket (R), dial scale cover
4-847-802-11 (A) Screw, case
4-845-907-11 (C) Cover, side
1-520-284-00 (H) Meter, SIGNAL (ME1)
4-849-732-00 (C) Cover, dial scale
X-4849-704-2 (B) Knob Ass'y, BASS, TREBLE
X-4849-706-0 (B) Knob Ass'y, REC LEVEL (L)
X-4849-705-3 (B) Knob Ass'y, REC LEVEL (R)
X-4849-708-0 (B) Knob Ass'y, VOLUME (R)
X-4849-603-0 (C) Knob Ass'y, FUNCTION
X-4849-707-0 (B) Knob Ass'y, VOLUME (L)
X-4849-703-2 (B) Knob Ass'y, TUNING
TA, B3 x 6

Note:

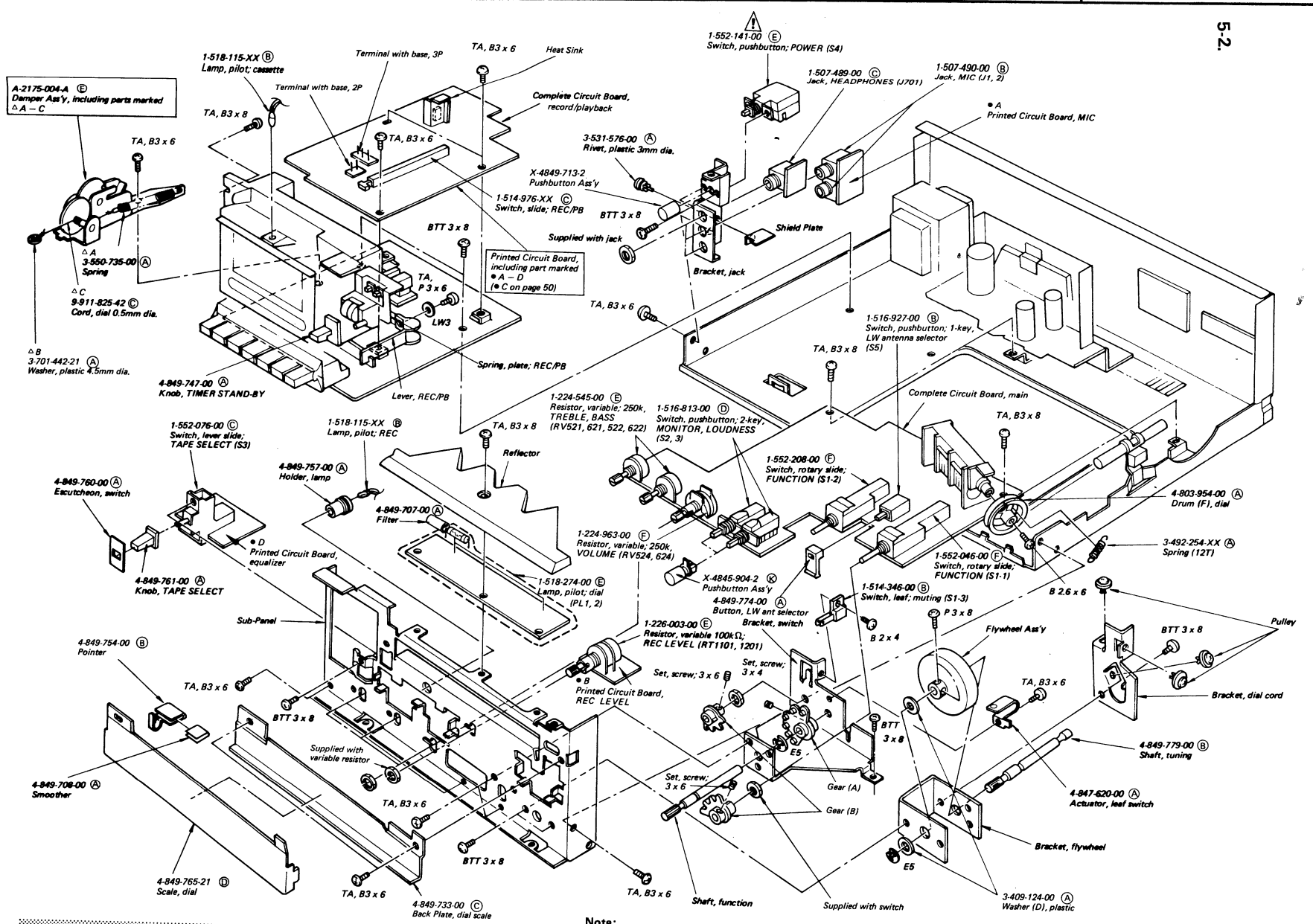
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters ((A) to (Z)) are applicable to European models only.


A-2175-004-A (E) Damper Ass'y, including parts marked △ A – C
1-518-115-XX (B) Lamp, pilot; cassette
Terminal with base, 3P
Terminal with base, 2P
TA, B3 x 8
TA, B3 x 6
Heat Sink
Complete Circuit Board, record/playback
1-552-141-00 (E) Switch, pushbutton; POWER (S4)
1-507-489-00 (C) Jack, HEADPHONES (J701)
1-507-490-00 (B) Jack, MIC (J1, 2)
• A Printed Circuit Board, MIC
3-531-576-00 (A) Rivet, plastic 3mm dia.
X-4849-713-2 Pushbutton Ass'y
1-514-976-XX (C) Switch, slide; REC/PB
BTT 3 x 8
Supplied with jack
Shield Plate
Bracket, jack
△ A 3-550-735-00 (A) Spring
△ C 9-911-825-42 (C) Cord, dial 0.5mm dia.
△ B 3-701-442-21 (A) Washer, plastic 4.5mm dia.
Printed Circuit Board, including part marked • A – D (• C on page 50)
TA, P 3 x 6
LW3
4-849-747-00 (A) Knob, TIMER STAND-BY
Lever, REC/PB
Spring, plate; REC/PB
1-516-927-00 (B) Switch, pushbutton; 1-key, LW antenna selector (S5)
Complete Circuit Board, main
1-224-545-00 (E) Resistor, variable; 250k, TREBLE, BASS (RV521, 621, 522, 622)
1-516-813-00 (D) Switch, pushbutton; 2-key, MONITOR, LOUDNESS (S2, 3)
1-552-076-00 (C) Switch, lever slide; TAPE SELECT (S3)
1-518-115-XX (B) Lamp, pilot; REC
Reflector
4-849-757-00 (A) Holder, lamp
4-849-760-00 (A) Escutcheon, switch
4-849-707-00 (A) Filter
1-552-208-00 (F) Switch, rotary slide; FUNCTION (S1-2)
4-803-954-00 (A) Drum (F), dial
1-224-963-00 (F) Resistor, variable; 250k, VOLUME (RV524, 624)
3-492-254-XX (A) Spring (12T)
1-552-046-00 (F) Switch, rotary slide; FUNCTION (S1-1)
• D Printed Circuit Board, equalizer
4-849-761-00 (A) Knob, TAPE SELECT
1-518-274-00 (E) Lamp, pilot; dial (PL1, 2)
X-4845-904-2 (K) Pushbutton Ass'y
1-514-346-00 (B) Switch, leaf; muting (S1-3)
4-849-774-00 (A) Button, LW ant selector
Bracket, switch
B 2.6 x 6
B 2 x 4
P 3 x 8
Flywheel Ass'y
Pulley
BTT 3 x 8
Sub-Panel
1-226-003-00 (E) Resistor, variable 100kΩ; REC LEVEL (RT1101, 1201)
Set, screw; 3 x 6
Set, screw; 3 x 4
4-849-754-00 (B) Pointer
• B Printed Circuit Board, REC LEVEL
Bracket, dial cord
Supplied with variable resistor
4-849-779-00 (B) Shaft, tuning
4-849-708-00 (A) Smoother
Gear (A)
Gear (B)
4-847-620-00 (A) Actuator, leaf switch
Bracket, flywheel
4-849-765-21 (D) Scale, dial
4-849-733-00 (C) Back Plate, dial scale
Shaft, function
Supplied with switch
3-409-124-00 (A) Washer (D), plastic
TA, BV3 x 6

Note:

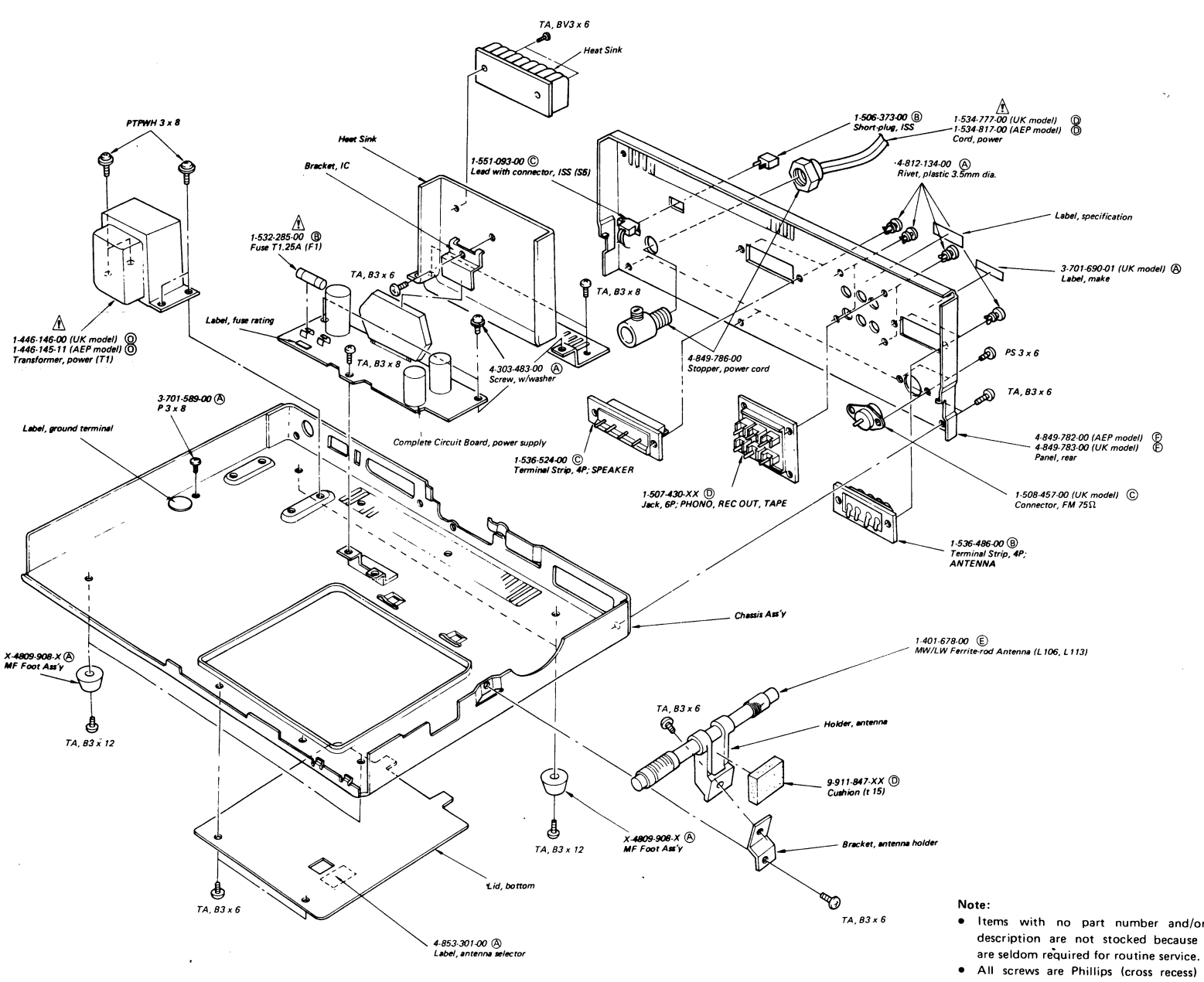
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters ((A) to (Z)) are applicable to European models only.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.


A-2175-004-A (E) Damper Ass'y, including parts marked △A – C
△A 3-550-735-00 (A) Spring
△B 3-701-442-21 (A) Washer, plastic 4.5mm dia.
△C 9-911-825-42 (C) Cord, dial 0.5mm dia.
1-518-115-XX (B) Lamp, pilot; cassette
Terminal with base, 2P
Terminal with base, 3P
TA, B3 x 6
Heat Sink
Complete Circuit Board, record/playback
Printed Circuit Board, including part marked • A – D (• C on page 50)
BTT 3 x 8
TA, P3 x 6
LW3
Spring, plate; REC/PB
Lever, REC/PB
4-849-747-00 (A) Knob, TIMER STAND-BY
1-552-141-00 (E) Switch, pushbutton; POWER (S4)
1-507-489-00 (C) Jack, HEADPHONES (J701)
1-507-490-00 (B) Jack, MIC (J1, 2)
• A Printed Circuit Board, MIC
3-531-576-00 (A) Rivet, plastic 3mm dia.
X-4849-713-2 Pushbutton Ass'y
1-514-976-XX (C) Switch, slide; REC/PB
Supplied with jack
Shield Plate
Bracket, jack
1-516-927-00 (B) Switch, pushbutton; 1-key, LW antenna selector (S5)
Complete Circuit Board, main
1-224-545-00 (E) Resistor, variable; 250k, TREBLE, BASS (RV521, 621, 522, 622)
1-516-813-00 (D) Switch, pushbutton; 2-key, MONITOR, LOUDNESS (S2, 3)
1-552-208-00 (F) Switch, rotary slide; FUNCTION (S1-2)
4-803-954-00 (A) Drum (F), dial
3-492-254-XX (A) Spring (12T)
1-552-046-00 (F) Switch, rotary slide; FUNCTION (S1-1)
1-552-076-00 (C) Switch, lever slide; TAPE SELECT (S3)
1-518-115-XX (B) Lamp, pilot; REC
4-849-757-00 (A) Holder, lamp
4-849-707-00 (A) Filter
Reflector
4-849-760-00 (A) Escutcheon, switch
• D Printed Circuit Board, equalizer
4-849-761-00 (A) Knob, TAPE SELECT
1-518-274-00 (E) Lamp, pilot; dial (PL1, 2)
1-224-963-00 (F) Resistor, variable; 250k, VOLUME (RV524, 624)
X-4845-904-2 (K) Pushbutton Ass'y
4-849-774-00 (A) Button, LW ant selector
Bracket, switch
1-514-346-00 (B) Switch, leaf; muting (S1-3)
B 2.6 x 6
B 2 x 4
P 3 x 8
Flywheel Ass'y
BTT 3 x 8
Pulley
Bracket, dial cord
Sub-Panel
4-849-754-00 (B) Pointer
1-226-003-00 (E) Resistor, variable 100kΩ; REC LEVEL (RT1101, 1201)
• B Printed Circuit Board, REC LEVEL
Set, screw; 3 x 6
Set, screw; 3 x 4
E5
BTT 3 x 8
4-849-779-00 (B) Shaft, tuning
Supplied with variable resistor
4-849-708-00 (A) Smoother
Gear (A)
Gear (B)
4-847-620-00 (A) Actuator, leaf switch
Bracket, flywheel
4-849-765-21 (D) Scale, dial
4-849-733-00 (C) Back Plate, dial scale
Shaft, function
Supplied with switch
3-409-124-00 (A) Washer (D), plastic

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.


TA, BV3 x 6
Heat Sink
PTPWH 3 x 8
Heat Sink
Bracket, IC
1-551-093-00 (C) Lead with connector, ISS (S5)
1-506-373-00 (B) Short-plug, ISS
1-534-777-00 (UK model) (D)
1-534-817-00 (AEP model) (B) Cord, power
4-812-134-00 (A) Rivet, plastic 3.5mm dia.
Label, specification
1-532-285-00 (B) Fuse T1.25A (F1)
TA, B3 x 6
TA, B3 x 8
Label, fuse rating
3-701-690-01 (UK model) (A) Label, make
1-446-146-00 (UK model) (Q)
1-446-145-11 (AEP model) (Q)
Transformer, power (T1)
4-303-483-00 (A) Screw, w/washer
4-849-786-00 Stopper, power cord
PS 3 x 6
3-701-589-00 (A) P 3 x 8
Label, ground terminal
Complete Circuit Board, power supply
1-536-524-00 (C) Terminal Strip, 4P; SPEAKER
1-507-430-XX (D) Jack, 6P; PHONO, REC OUT, TAPE
4-849-782-00 (AEP model) (F)
4-849-783-00 (UK model) (F) Panel, rear
1-508-457-00 (UK model) (C) Connector, FM 75Ω
1-536-486-00 (B) Terminal Strip, 4P; ANTENNA
Chassis Ass'y
1-401-678-00 (E) MW/LW Ferrite-rod Antenna (L106, L113)
X-4809-908-X (A) MF Foot Ass'y
TA, B3 x 12
TA, B3 x 6
Holder, antenna
9-911-847-XX (D) Cushion (t 15)
Bracket, antenna holder
Lid, bottom
4-853-301-00 (A) Label, antenna selector

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

SECTION 6
ELECTRICAL PARTS LIST

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description
		SEMICONDUCTORS
		Transistors
Q101 - 109	8-729-671-13	Ⓑ 2SC710
⇒ Q110, 111	8-724-375-01	Ⓑ 2SC403C
⇒ Q301, 401	8-729-665-47	Ⓑ 2SC1362
⇒ Q302, 402	8-729-663-47	Ⓑ 2SC1364
⇒ Q521, 621	8-729-665-47	Ⓑ 2SC1362
Q901	8-760-413-10	Ⓔ 2SC1475
		ICs
⇒ IC201	8-759-311-56	Ⓙ HA1156W
IC701	8-759-301-23	Ⓛ SI1123HD
		Diodes
D101–103	8-719-815-55	Ⓑ 1S1555
D104, 105	8-719-422-21	Ⓑ 1T22AM
D106, 107	8-719-815-55	Ⓑ 1S1555
⇒ D108, 201	8-719-931-15	Ⓑ EQB01-15
D202	8-719-301-03	Ⓑ SEL103R
⇒ D701	8-719-931-07	Ⓑ EQB01-07
D901	⚠ 8-719-502-20	Ⓒ S2VB20
		COILS
L104	1-401-677-00	Ⓑ SW Ant
L105	1-401-676-00	Ⓑ LW EXT Ant
L106, L113	1-401-678-00	Ⓔ LW/MW Ferrite-rod Ant
L107	1-405-743-00	Ⓑ SW Osc
L108	1-405-769-00	Ⓑ LW Osc
L109	1-405-732-00	Ⓑ MW Osc
L110	1-407-169-XX	Ⓐ Microinductor, 100μH
L111	1-407-178-XX	Ⓐ Microinductor, 1μH
L114	1-407-169-XX	Ⓐ Microinductor, 100μH
L301, 401	1-407-212-XX	Ⓐ Microinductor, 33mH
		TRANSFORMERS AND FILTERS
BPF101	1-231-313-00	Ⓑ Filter, bandpass
CF101,102	1-527-220-XX	Ⓕ Filter, ceramic; 10.7MHz
CFU101	1-403-150-00	Ⓒ AM IFT (AEP model)
	1-403-830-00	Ⓒ AM IFT (UK model)
IFT101	1-404-004-00	Ⓑ FM IFT
IFT102	1-404-064-00	Ⓑ AM IFT
IFT103	1-403-822-00	Ⓒ FM Discriminator
T1	⚠ 1-446-145-11	Ⓞ Power (AEP model)
	⚠ 1-446-146-00	Ⓞ Power (UK model)

• ⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description
		CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted.
50WV or less are not indicated except for electrolytics.
pF = μμF, elect = electrolytic

Ref. No.	Part No.	Description		
C101	1-102-950-11	Ⓐ 13p		
C102,103	1-101-005-11	Ⓐ 0.022		
C104	1-101-586-11	Ⓐ 0.75p		
C105	1-102-945-11	Ⓐ 8p		
C106	1-102-121-11	Ⓐ 0.0022		
C107	1-102-979-11	Ⓐ 240p		
C108	1-102-121-11	Ⓐ 0.0022		
C109	1-101-005-11	Ⓐ 0.022		
C110	1-101-004-11	Ⓐ 0.01		
C112–116	1-101-005-11	Ⓐ 0.022		
C117,118	1-102-936-11	Ⓐ 3p		
C119	1-121-726-11	Ⓐ 0.47	50V	elect
C120	1-101-005-11	Ⓐ 0.022		
C121	1-121-651-11	Ⓐ 10	16V	elect
C122	1-121-419-11	Ⓑ 220	6.3V	elect
C123	1-108-246-12	Ⓐ 0.047		mylar
C124	1-102-951-11	Ⓐ 15p		
C126	1-102-123-11	Ⓐ 0.0033		
C127	1-102-286-11	Ⓐ 10p		
C128	1-102-964-11	Ⓐ 36p		
C129	1-103-738-11	Ⓐ 3600p		polystyrol
C130	1-103-702-11	Ⓐ 110p		polystyrol
C131	1-103-713-11	Ⓐ 330p		polystyrol
C132	1-102-893-11	Ⓐ 18p		
C133	1-107-097-11	Ⓐ 330p		silvered mica
C134	1-102-521-11	Ⓐ 43p		
C135	1-108-232-12	Ⓐ 0.0033		mylar
C136	1-102-508-11	Ⓐ 10p		
C137	1-108-239-12	Ⓐ 0.01		mylar
C138,139	1-101-005-11	Ⓐ 0.022		
C140	1-102-684-11	Ⓐ 8p		
C141	1-101-005-11	Ⓐ 0.022		
C144	1-101-982-11	Ⓐ 24p		
C145	1-102-681-11	Ⓐ 2p		
C146	1-127-046-11	Ⓐ 0.22	16V	solid aluminum
C147,148	1-101-004-11	Ⓐ 0.01		
C149	1-101-005-11	Ⓐ 0.022		
C150	1-101-005-11	Ⓐ 0.022		
C151	1-101-004-11	Ⓐ 0.01		
C152	1-102-115-11	Ⓐ 560p		
C153	1-108-242-12	Ⓐ 0.022		mylar
C154	1-101-005-11	Ⓐ 0.022		
C155,156	1-121-651-11	Ⓐ 10	16V	elect
C160	1-101-005-11	Ⓐ 0.022		
C164,165	1-102-282-11	Ⓐ 8p		
C167	1-108-242-12	Ⓐ 0.022		mylar
C168	1-108-244-12	Ⓐ 0.033		mylar
C170	1-102-947-11	Ⓐ 10p		
C171	1-108-242-12	Ⓐ 0.022		mylar
C172	1-101-005-11	Ⓐ 0.022		
C174	1-101-118-11	Ⓐ 0.01		
C175	1-101-005-11	Ⓐ 0.022		
C176	1-102-286-11	Ⓐ 10p		
C177	1-102-979-11	Ⓐ 240p		
C178	1-102-687-11	Ⓐ 12p		
C190	1-101-005-11	Ⓐ 0.022		
C191	1-107-085-11	Ⓐ 100p		silvered mica
C193	1-103-731-11	Ⓐ 0.0018		polystyrol
C195	1-102-126-11	Ⓐ 0.0056		
C196	1-102-114-11	Ⓐ 470p		
C202	1-102-116-11	Ⓐ 680p		
C203	1-121-651-11	Ⓐ 10	16V	elect
C204	1-108-361-12	Ⓐ 0.056		mylar
C205	1-121-391-11	Ⓐ 1	50V	elect
C206,207	1-121-726-11	Ⓐ 0.47	50V	elect
C208	1-103-617-11	Ⓐ 470p		polystyrol
C209,210	1-108-242-12	Ⓐ 0.022		mylar
C211,212	1-121-726-11	Ⓐ 0.47	50V	elect
C213	1-121-940-11	Ⓑ 470	16V	elect

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description		
C301, 401	1-121-395-11	Ⓐ 4.7	25V	elect
C302, 402	1-101-001-11	Ⓐ 0.001		
C303, 403	1-121-402-11	Ⓐ 33	10V	elect
C304, 404	1-101-881-11	Ⓐ 47p		
C305, 405	1-121-391-11	Ⓐ 1	50V	elect
C306, 406	1-102-119-11	Ⓐ 0.0015		
C307, 407	1-102-816-11	Ⓐ 120p		
C308, 408	1-102-126-11	Ⓐ 0.0056		
C309	1-123-193-11	Ⓑ 100	16V	elect
C310	1-123-186-11	Ⓑ 47	35V	elect
C315, 415	1-108-230-12	Ⓐ 0.0022		mylar
C521, 621	1-102-119-11	Ⓐ 0.0015		
C525, 622	1-102-129-11	Ⓐ 0.01		
C523, 623	1-102-126-11	Ⓐ 0.0056		
C524, 624	1-108-361-12	Ⓐ 0.056		mylar
C525, 625	1-101-797-11	Ⓐ 0.1		(semiconductor)
C526, 626	1-101-001-11	Ⓐ 0.001		
C527, 627	1-121-391-11	Ⓐ 1	50V	elect
C528, 628	1-102-108-11	Ⓐ 150p		
C529, 629	1-102-128-11	Ⓐ 0.0082		
C530	1-121-261-11	Ⓑ 220	35V	elect
C701, 801	1-121-914-11	Ⓐ 3.3	50V	elect
C702, 802	1-121-652-11	Ⓐ 47	35V	elect
C703, 803	1-102-975-11	Ⓐ 100p		
C704, 804	1-121-409-11	Ⓐ 47	16V	elect
C705, 805	1-121-261-11	Ⓑ 220	35V	elect
C706, 806	1-108-361-12	Ⓐ 0.056		mylar
C707	1-121-398-11	Ⓐ 10	25V	elect
C901	1-123-058-11	Ⓑ 47	50V	elect
C902	1-121-410-11	Ⓑ 47	25V	elect
C903	⚠ 1-125-157-11	Ⓕ 6800	42V	elect
C904	⚠ 1-125-157-11	Ⓕ 6800	42V	elect
C905	⚠ 1-108-777-12	Ⓑ 0.022	300V	mylar
CT101,102 CV101–104	1-151-318-00	Ⓙ Tuning		
CT104–109	1-141-138-XX	Ⓑ Trimmer		

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	*Part No.*	*Description*			
RESISTORS					
All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 30 for their part number.					
R152	1-213-139-11	Ⓐ 470	1W	metal oxide	
R705, 805	⚠1-212-958-11	Ⓐ 10	½W	fusible	
R706, 806	1-202-565-11	Ⓐ 470	½W	composition	
R905	⚠1-213-137-11	Ⓐ 330	1W	metal oxide (nonflammable)	
R906	⚠1-213-133-11	Ⓐ 150	1W	metal oxide (nonflammable)	
R908	1-202-587-11	Ⓐ 3.8k	½W	composition	
R909	⚠1-212-881-11	Ⓐ 100	¼W	fusible	
RV201	1-224-645-XX	Ⓑ 10k-B, adjustable; 19kHz			
RV521, 621 RV522, 622	1-224-545-00	Ⓔ 250k-A, variable; TREBLE, BASS			
RV524, 624	1-224-963-00	Ⓕ 250k-B, variable; VOLUME			
SWITCHES					
S1-1	1-552-046-00	Ⓕ Rotary-slide, FUNCTION			
S1-2	1-552-208-00	Ⓕ Rotary-slide, FUNCTION			
S1-3	1-514-346-00	Ⓑ Leaf, muting			
S2,3	1-516-813-00	Ⓓ Pushbutton, 2-key; MONITOR, LOUDNESS			
S4	⚠1-552-141-00	Ⓔ Pushbutton, POWER			
S5	1-516-927-00	Ⓔ Pushbutton, 1-key; LW antenna selector			
MISCELLANEOUS					
CP1	⚠1-102-394-11	Ⓐ Capacitor, ceramic			
CR101	1-231-202-11	Ⓑ Encapsulated Component			
F1	⚠1-532-285-00	Ⓑ Fuse, T1.25A			
J701	1-507-489-00	Ⓒ Jack, HEADPHONES			
ME1	1-520-284-00	Ⓗ Meter, SIGNAL			
PL1, 2	1-518-274-00	Ⓔ Lamp, dial			
	1-507-430-XX	Ⓓ Jack, 6p; PHONO, REC OUT TAPE			
	1-508-457-00	Ⓒ Connector, FM 75Ω (UK model)			
	1-536-486-00	Ⓑ Terminal Strip, 4p; ANTENNA			
	1-536-524-00	Ⓒ Terminal Strip, 4p; SPEAKER			
	⚠1-534-777-00	Ⓓ Cord, power (UK model)			
	⚠1-534-817-00	Ⓓ Cord, power (AEP model)			

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

ACCESSORIES & PACKING MATERIALS

Part No.	*Description*
X-3701-105-0	Ⓐ Tips Ass'y, head cleaning
1-501-161-00	Ⓕ Feeder, antenna
1-534-492-00	Ⓒ Cord, antenna
3-701-630-00	Ⓐ Bag, plastic
3-770-576-11	Ⓕ Manual, instruction
4-841-807-00	Ⓔ Bag, plastic
4-845-953-00	Ⓑ Cushion (R)
4-845-954-00	Ⓑ Cushion (L)
4-849-787-00	Ⓖ Carton
4-849-789-00	Cushion
4-849-790-00	Cushion, lower (L)
4-849-791-00	Cushion, lower (R)
7-824-012-10	Ⓐ Leaflet

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

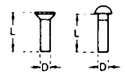
1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European models only.

Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*	Ω	*Part No.*
1.0	1-244-601-11	10	1-244-625-11	100	1-244-649-11	1.0k	1-244-673-11	10k	1-244-697-11	100k	1-244-721-11	1.0M	1-244-745-11
1.1	1-244-602-11	11	1-244-626-11	110	1-244-650-11	1.1k	1-244-674-11	11k	1-244-698-11	110k	1-244-722-11	1.1M	1-244-746-11
1.2	1-244-603-11	12	1-244-627-11	120	1-244-651-11	1.2k	1-244-675-11	12k	1-244-699-11	120k	1-244-723-11	1.2M	1-244-747-11
1.3	1-244-604-11	13	1-244-628-11	130	1-244-652-11	1.3k	1-244-676-11	13k	1-244-700-11	130k	1-244-724-11	1.3M	1-244-748-11
1.5	1-244-605-11	15	1-244-629-11	150	1-244-653-11	1.5k	1-244-677-11	15k	1-244-701-11	150k	1-244-725-11	1.5M	1-244-749-11
1.6	1-244-606-11	16	1-244-630-11	160	1-244-654-11	1.6k	1-244-678-11	16k	1-244-702-11	160k	1-244-726-11	1.6M	1-244-750-11
1.8	1-244-607-11	18	1-244-631-11	180	1-244-655-11	1.8k	1-244-679-11	18k	1-244-703-11	180k	1-244-737-11	1.8M	1-244-751-11
2.0	1-244-608-11	20	1-244-632-11	200	1-244-656-11	2.0k	1-244-680-11	20k	1-244-704-11	200k	1-244-728-11	2.0M	1-244-752-11
2.2	1-244-609-11	22	1-244-633-11	220	1-244-657-11	2.2k	1-244-681-11	22k	1-244-705-11	220k	1-244-729-11	2.2M	1-244-753-11
2.4	1-244-610-11	24	1-244-634-11	240	1-244-658-11	2.4k	1-244-682-11	24k	1-244-706-11	240k	1-244-730-11	2.4M	1-244-754-11
2.7	1-244-611-11	27	1-244-635-11	270	1-244-659-11	2.7k	1-244-683-11	27k	1-244-707-11	270k	1-244-731-11	2.7M	1-244-755-11
3.0	1-244-612-11	30	1-244-636-11	300	1-244-660-11	3.0k	1-244-684-11	30k	1-244-708-11	300k	1-244-732-11	3.0M	1-244-756-11
3.3	1-244-613-11	33	1-244-637-11	330	1-244-661-11	3.3k	1-244-685-11	33k	1-244-709-11	330k	1-244-733-11	3.3M	1-244-757-11
3.6	1-244-614-11	36	1-244-638-11	360	1-244-662-11	3.6k	1-244-686-11	36k	1-244-710-11	360k	1-244-734-11	3.6M	1-244-758-11
3.9	1-244-615-11	39	1-244-639-11	390	1-244-663-11	3.9k	1-244-687-11	39k	1-244-711-11	390k	1-244-735-11	3.9M	1-244-759-11
4.3	1-244-616-11	43	1-244-640-11	430	1-244-664-11	4.3k	1-244-688-11	43k	1-244-712-11	430k	1-244-736-11	4.3M	1-244-760-11
4.7	1-244-617-11	47	1-244-641-11	470	1-244-665-11	4.7k	1-244-689-11	47k	1-244-713-11	470k	1-244-737-11	4.7M	1-244-761-11
5.1	1-244-618-11	51	1-244-642-11	510	1-244-666-11	5.1k	1-244-690-11	51k	1-244-714-11	510k	1-244-738-11	5.1M	1-244-762-11
5.6	1-244-619-11	56	1-244-643-11	560	1-244-667-11	5.6k	1-244-691-11	56k	1-244-715-11	560k	1-244-739-11		
6.2	1-244-620-11	62	1-244-644 11	620	1-244-668-11	6.2k	1-244-692-11	62k	1-244-716-11	620k	1-244-740-11		
6.8	1-244-621-11	68	1-244-645-11	680	1-244-669-11	6.8k	1-244-693-11	68k	1-244-717-11	680k	1-244-741-11		
7.5	1-244-622-11	75	1-244-646-11	750	1-244-670-11	7.5k	1-244-694-11	75k	1-244-718-11	750k	1-244-742-11		
8.2	1-244-623-11	82	1-244-647-11	820	1-244-671-11	8.2k	1-244-695-11	82k	1-244-719-11	820k	1-244-743-11		
9.1	1-244-624-11	91	1-244-648-11	910	1-244-672-11	9.1k	1-244-696-11	91k	1-244-720-11	910k	1-244-744-11		

HARDWARE NOMENCLATURE

Screw: – P 3 x 10
- *L: Length in mm*
- *D: Diameter in mm*
- *Type of head*
- *Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).*



Nut, Washer, Retaining ring: N 3
- *Diameter of usable screw or shaft*
- *Reference designation*

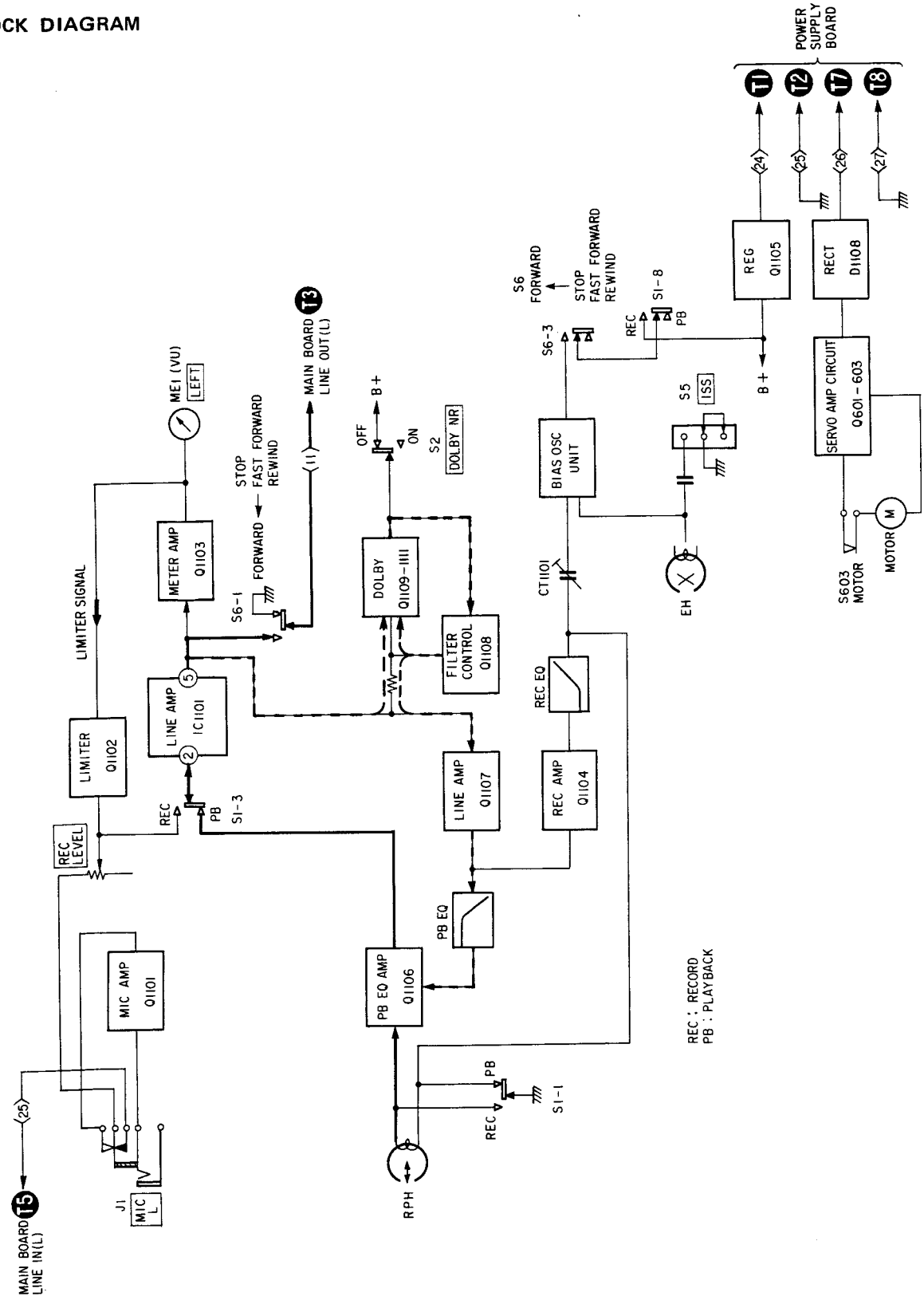
Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

CASSETTE RECORDER SECTION

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM

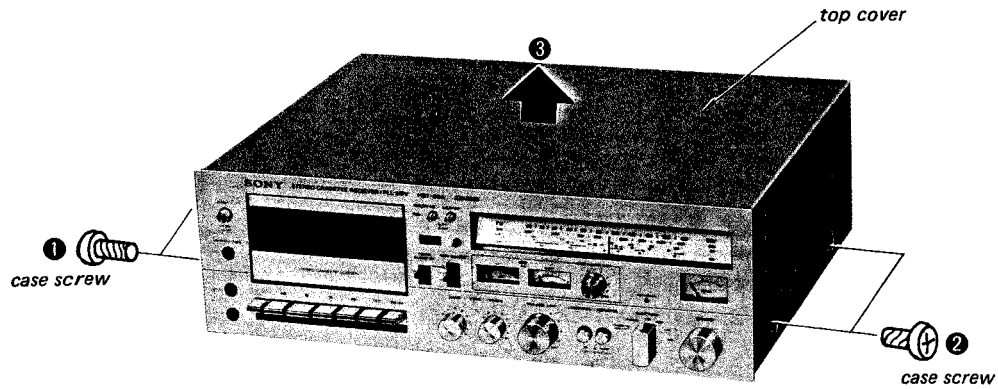


SECTION 2
DISASSEMBLY

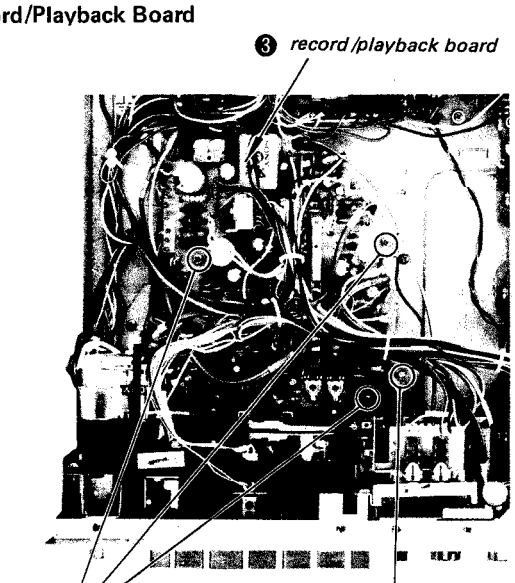
- Follow the disassembly procedure in the numerical order given.

2-1. REMOVAL

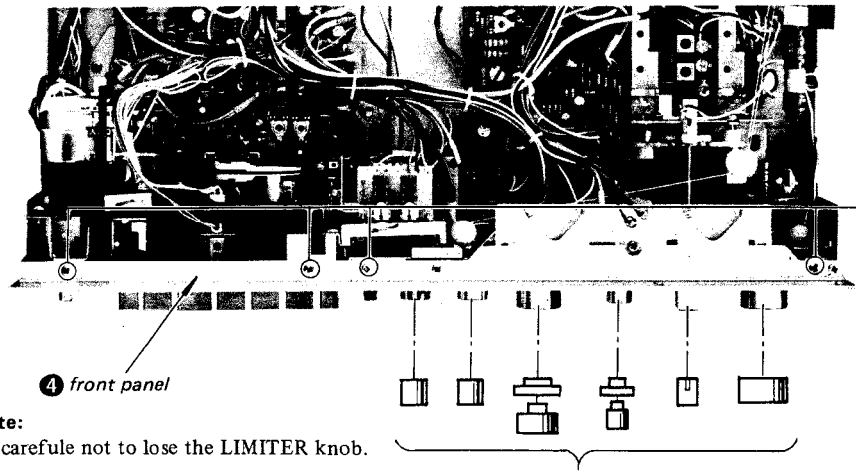
TOP COVER REMOVAL



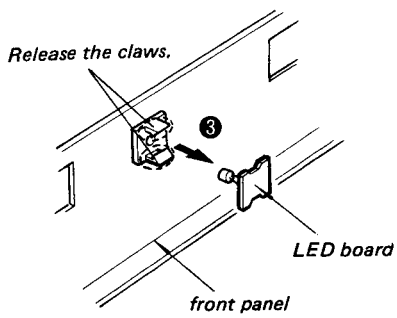
Record/Playback Board



Front Panel

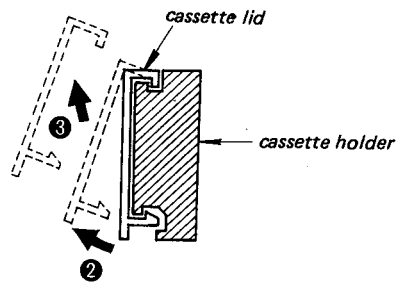


Note:
Be carefule not to lose the LIMITER knob.

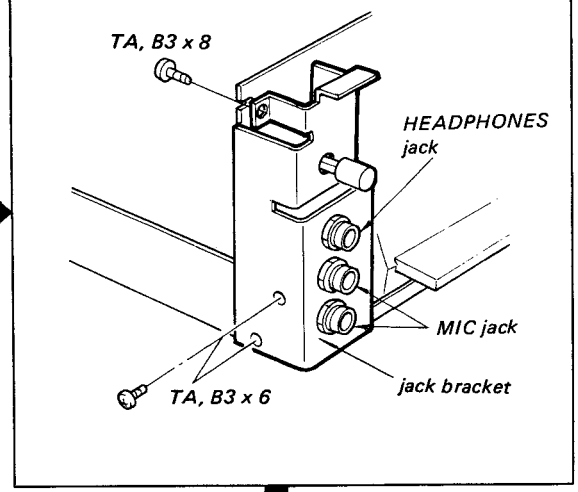


Cassette Lid

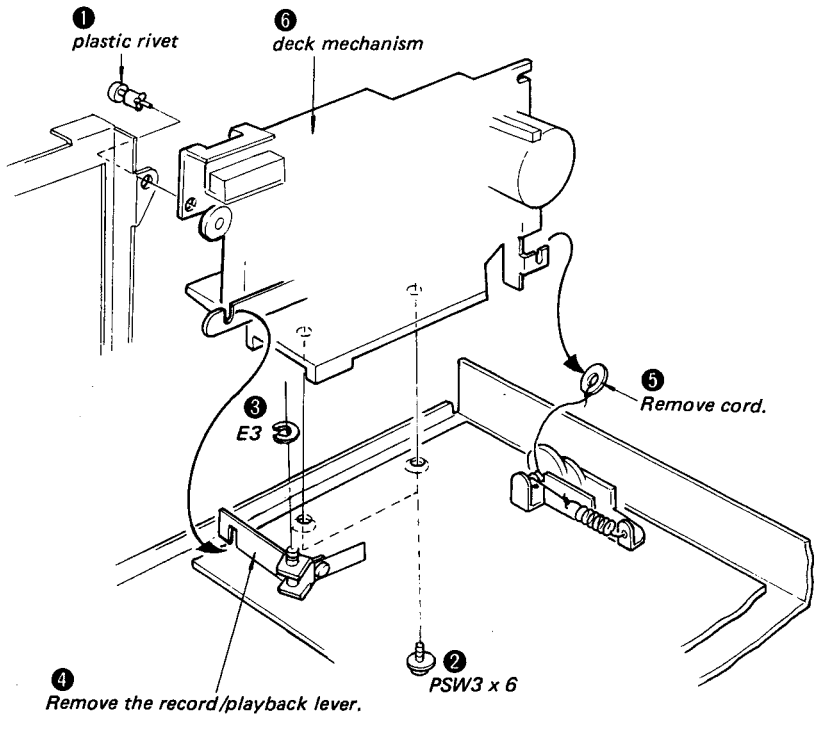
❶ Depress the EJECT button.



Jack Bracket



Cassette Deck Mechanism



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

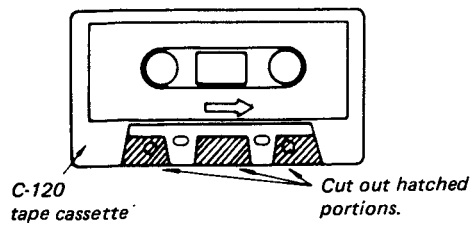
record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

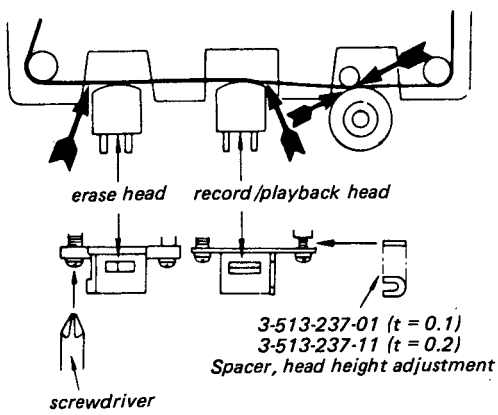
Tape Path Adjustment

– Playback Mode –

1. Make an adjustment cassette as shown below.



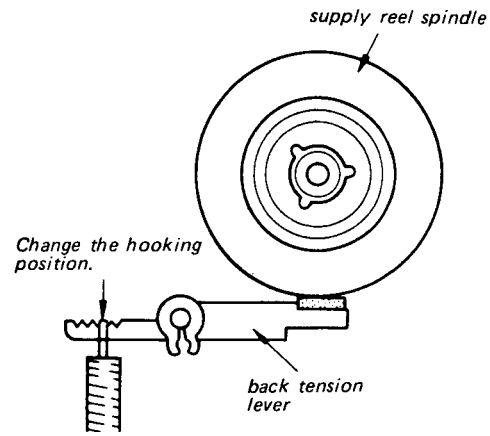
2. In playback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at arrowed portions.



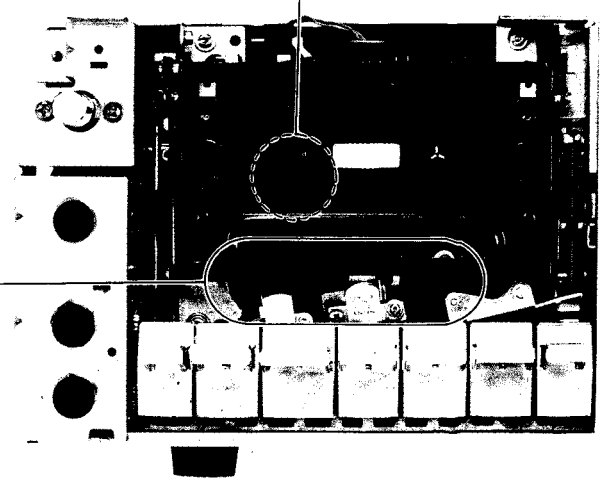
Forward Back Tension Torque Adjustment

– Playback Mode –

Use type CQ-102A cassette torque meter.



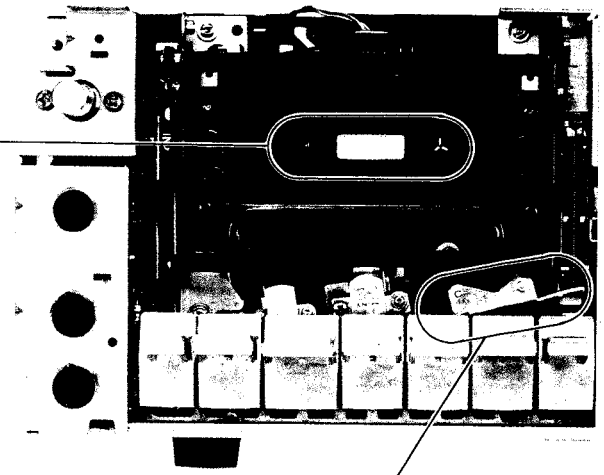
Specification: 2 – 5 g·cm
(0.028 – 0.069 oz·inch)



Forward Torque Measurement

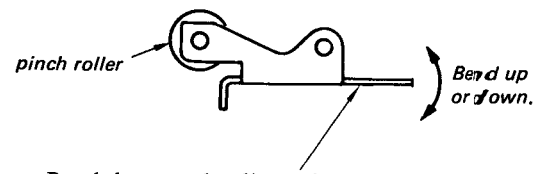
– Playback Mode –

Torque meter	Meter reading
SONY CQ-101A CQ-102A CQ-103A	30 – 50 g·cm (0.42 – 0.69 oz·inch)



PAUSE Timing Adjustment

– PAUSE Mode –



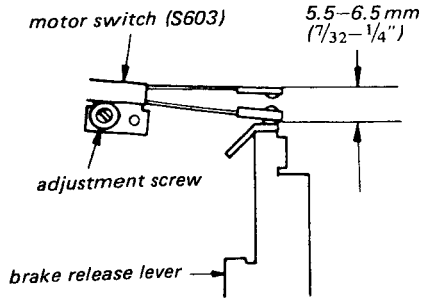
Bend here and adjust the position of pinch roller so that the rotations of pinch roller and reel spindles stop at the same time when slowly depressing PAUSE button.

Motor Switch (S603) Position Adjustment

– Stop Mode –

Loosen adjustment screw and adjust the position of the switch for the specified clearance between the switch leaves.

After the adjustment, tighten and lock the screw with suitable locking compound.

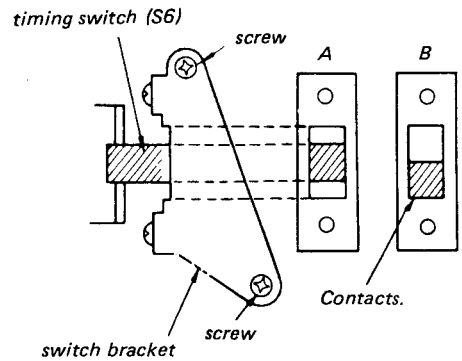


Timing Switch (S6) Position Adjustment

– Stop Mode –

Loosen the screws and adjust position of the switch bracket as marked B in figure below.

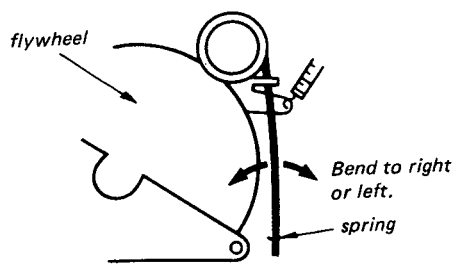
After the adjustment, tighten the screws.

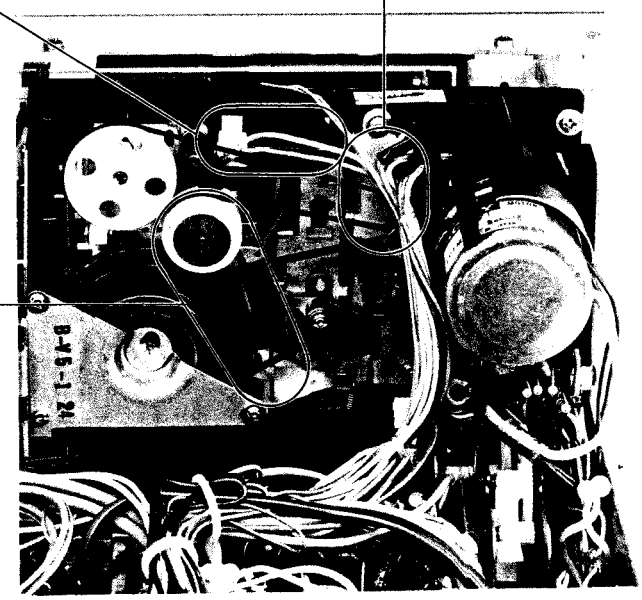


Fast Forward and Rewind Torque Adjustment

– Fast Forward and Rewind Modes –

Use type CQ-201A cassette torque meter.
Bend the spring for the torque of 55–95 g·cm (0.77–1.3 oz·inch).





3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustments should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

Switches should be set as follows unless otherwise specified.

FUNCTION switch:	CASSETTE
MONITOR switch:	SOURCE
TAPE SELECT switch:	NORMAL
LIMITER switch:	OFF
DOLBY NR switch:	OFF

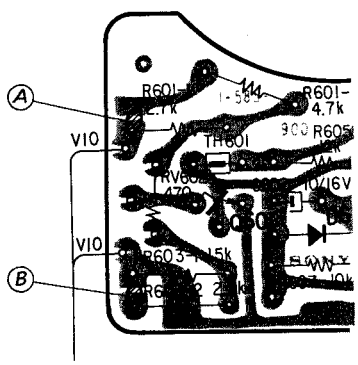
Standard Record

Feed the input signal (1 kHz, −10 dB) to the TAPE jack and set the REC LEVEL control to obtain 0 VU meter reading.

If adjustment is not made with RV602, solder portion Ⓐ or Ⓑ and repeat the adjustment.

Soldering portion	tape speed
Ⓐ	fast
Ⓑ	slow

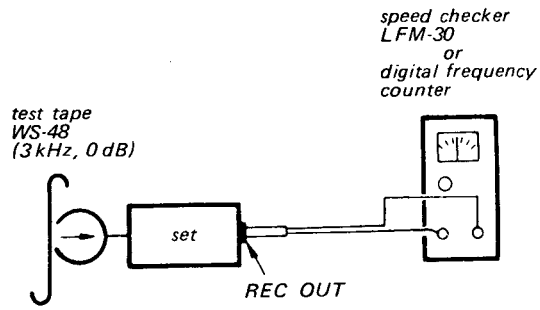
【SERVO AMP BOARD】
(CONDUCTOR SIDE)



Tape Speed Adjustment

Procedure:

Mode: playback



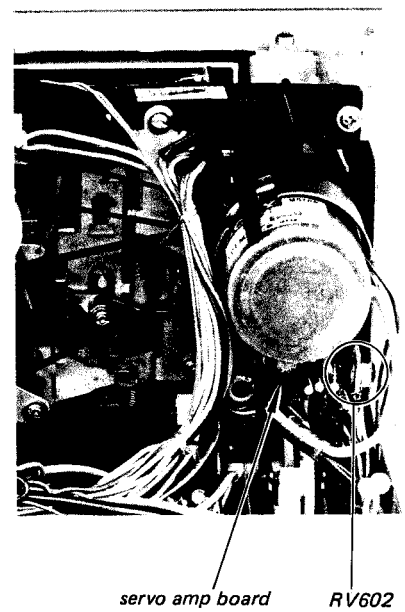
Adjust RV602 to obtain the specified values below.

Specification:

Speed checker	Digital frequency counter
−0.8 to +1 %	2,975 to 3,030 Hz

Frequency difference between beginning and end of tape should be within 1 % (30 Hz).

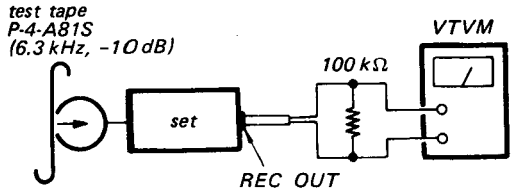
Adjustment Location:



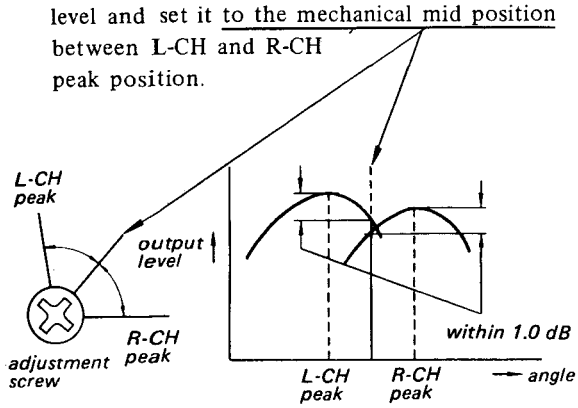
Record/playback Head Azimuth Adjustment

Procedure:

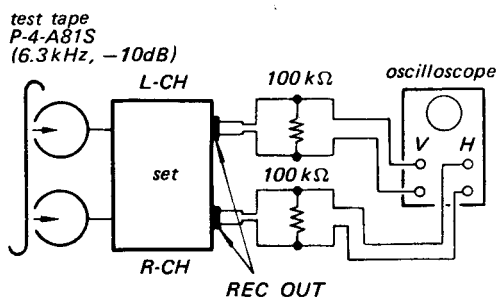
1. Mode: playback

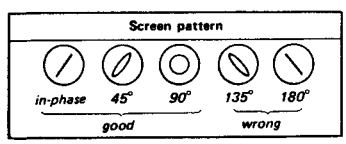


2. Turn the adjustment screw for the maximum level and set it to the mechanical mid position between L-CH and R-CH peak position.

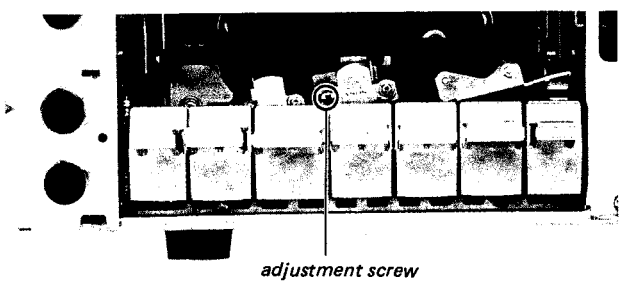


3. Mode: playback





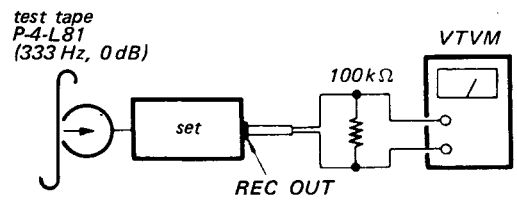
Adjustment Location:



Playback Level Adjustment

Procedure:

1. Mode: playback

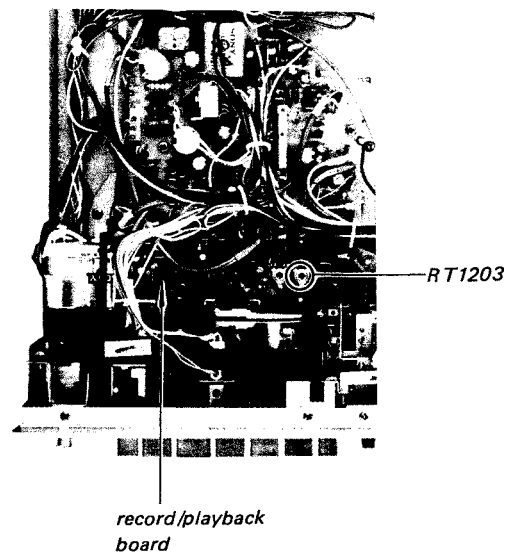


Adjust RT1203 to make the R-CH output signal level equal to the L-CH's.

Specification:

Level difference between channels:
less than 0.2 dB

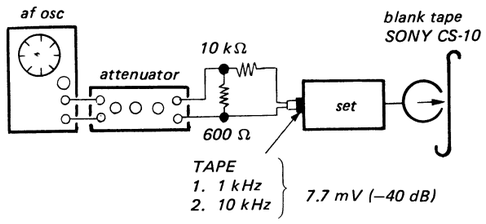
Adjustment Location:



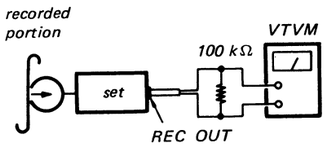
Record Bias Adjustment

Procedure:

1. Mode: standard record (See page 39.)



2. Mode: playback

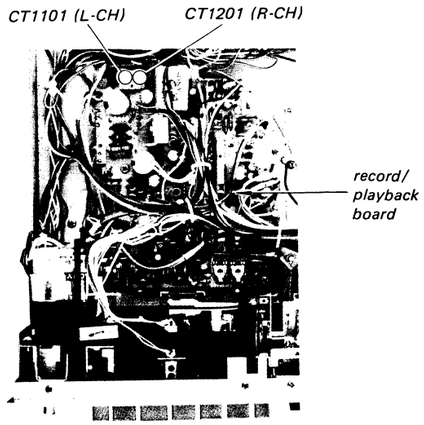


Adjust CT1101 (L-CH) and CT1201 (R-CH) to make 10 kHz and 1 kHz signal output levels equal.

Specifications:

10 kHz signal output level: –3 to +0.5 dB
(at this time 1 kHz signal output level is 0 dB)
Level difference between channels: less than 3 dB

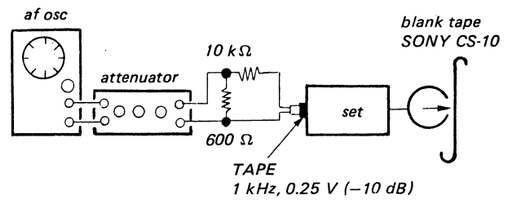
Adjustment Location:



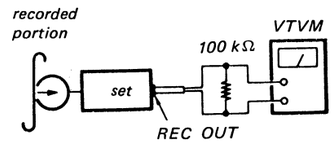
Record Level Adjustment

Procedure:

1. Mode: standard record (See page 39.)

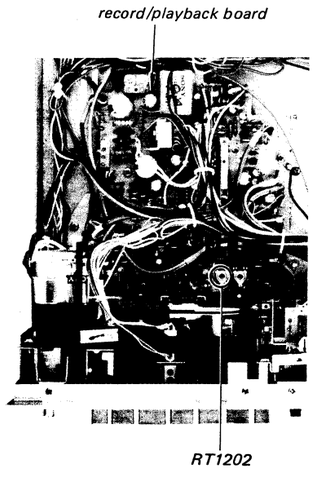


2. Mode: playback



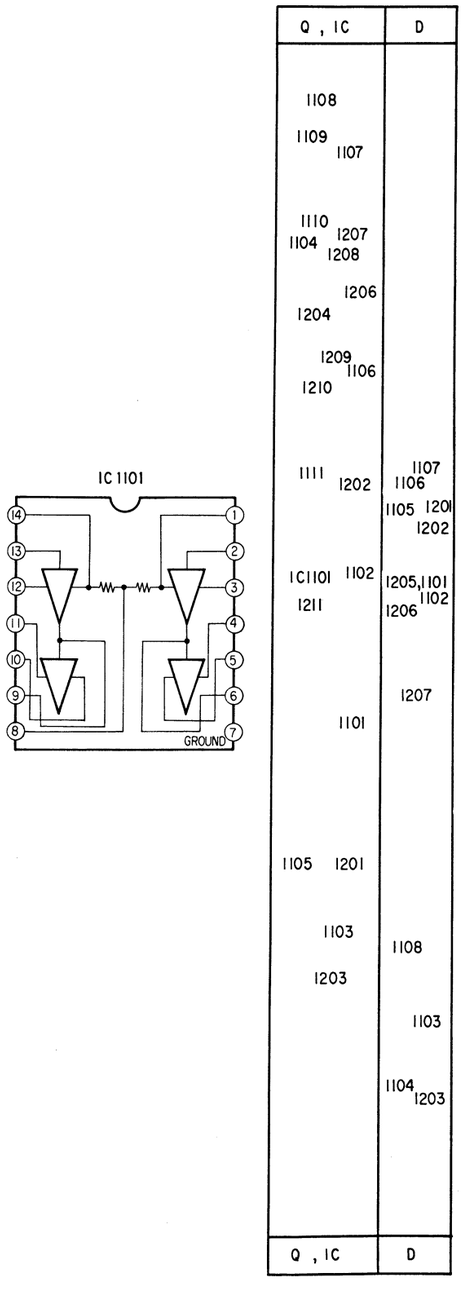
Adjust RT1202 to make the R-CH output signal level equal to the L-CH's.

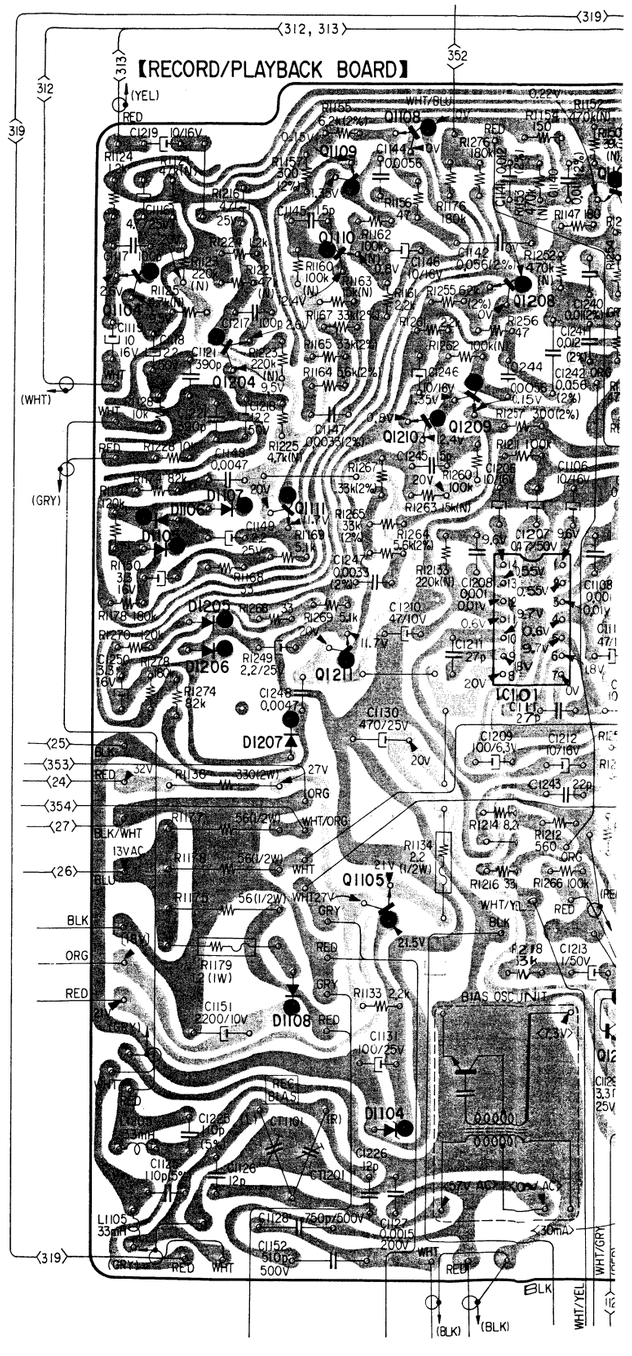
Adjustment Location:



4-1. MOUNTING DIAGRAM – Record/Playback Board –

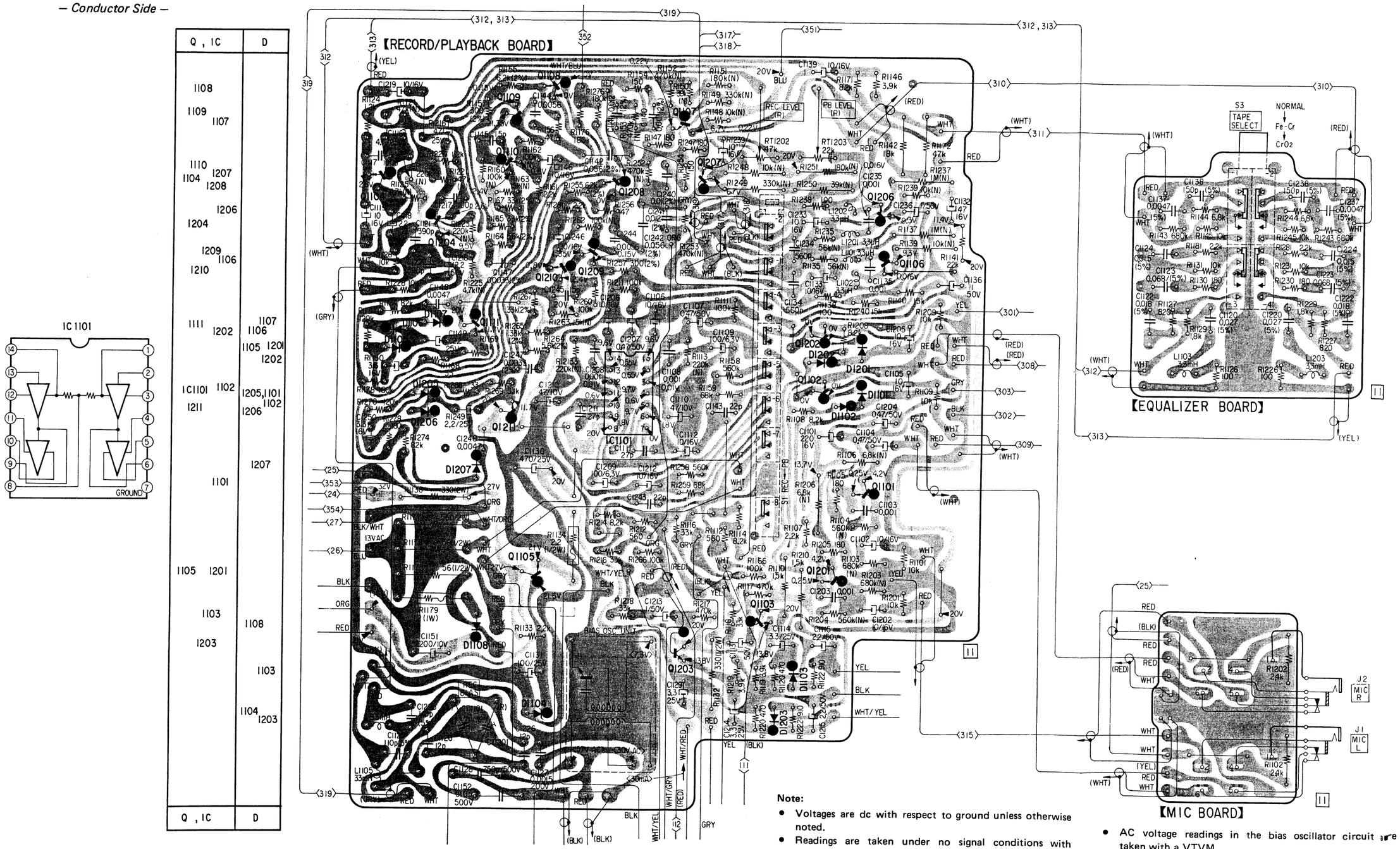
– Conductor Side –





4-1. MOUNTING DIAGRAM — Record/Playback Board —

— Conductor Side —



Note:

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  { } : FORWARD
  〈 〉 : RECORD
  no mark: FM

- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Voltage variations may be noted due to normal production tolerances.
- ▨ : B + pattern

4-2. MOUNTING DIAGRAM —Record/playback board —

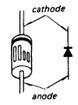
— Component Side —

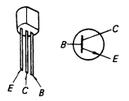
Replacement Semiconductors

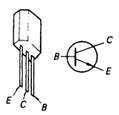
For replacement, use semiconductor except in ( ).

Q1101, 1106, 1107
Q1201, 1206, 1207 : 2SC1362 (2SC632A)
Q1102 – 1104
Q1202 – 1204
Q1108 – 1111 : 2SC1364 (2SC634A)
Q1208 – 1211
Q601, 602 : 2SC1364 (2SC633A)

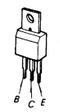
D1104: EQB01-21 (EQA01-21R)



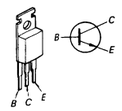




Q603: 2SC1761

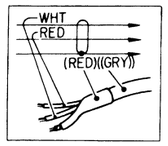


Q1105: 2SC1173



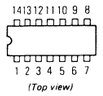
Note:

- Color code of sleeving over the end of the jacket.



- Ⓕ : fusible resistor.
- ▭ : B+ pattern.

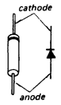
IC1101: LA3122



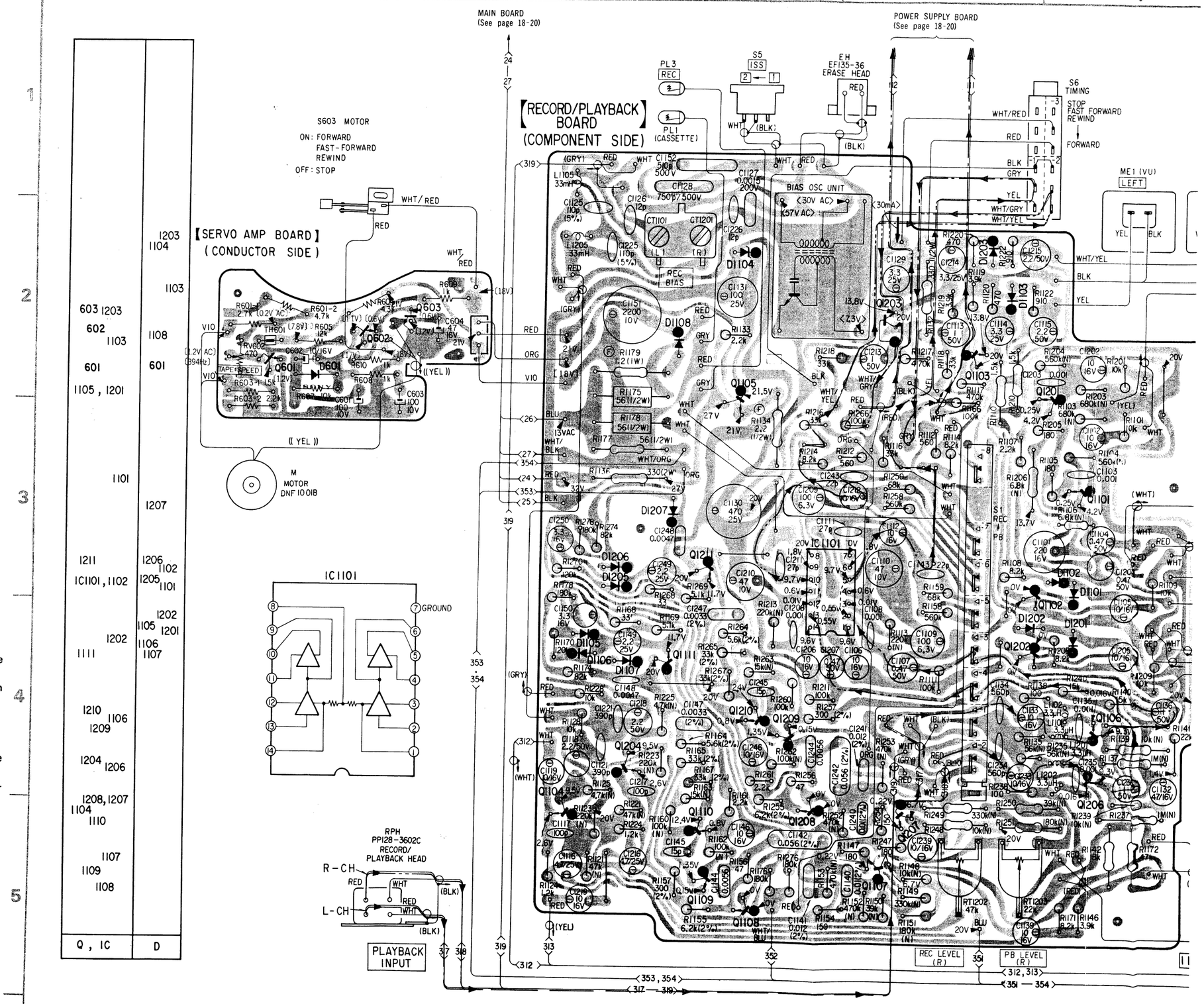
- Signal Path
  —→: COMMON
  —·→: L-CH
  —··→: R-CH
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  ( ) : FORWARD
  < > : RECORD
  no mark: FM
- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Voltage variations may be noted due to normal production tolerances.

D1101, 1201: VO9C (VO6C)

D601
D1102, 1202 : 1S1555 (1T40)
D1105, 1205
D1107, 1207 : 1S1555
D1103, 1203
D1106, 1206 : 1T22AM (1T22A)
D1108: 10E2



Q , IC	D
1203 1104	
	1103
603 1203 602 1103	1108
601 1105 , 1201	601
	1101
	1207
1211 IC1101 , 1102	1206 1102 1205 1101
	1202
1202 1111	1105 1201 1106 1107
1210 1106 1209	
1204 1206	
1208, 1207 1104 1110	
	1107
1109 1108	



S603 MOTOR
ON: FORWARD
FAST-FORWARD
REWIND
OFF: STOP

MAIN BOARD
(See page 18-20)

POWER SUPPLY BOARD
(See page 18-20)

【RECORD/PLAYBACK】
BOARD
(COMPONENT SIDE)

PL3 REC
PL1 (CASSETTE)
S5 ISS
EH EF135-36 ERASE HEAD
S6 TIMING
STOP
FAST FORWARD
REWIND
FORWARD
ME1 (VU) LEFT
ME2 (VU) RIGHT
BIAS OSC UNIT
<30V AC>
<57V AC>
<30mA>

【MIC BOARD】
(COMPONENT SIDE)
J1 MIC L R
J2

MAIN BOARD
(See page 18 20)

【REC LEVEL】
BOARD
(COMPONENT SIDE)
RT1101, 1201
100k(A)
REC LEVEL

【SWITCH】
BOARD
(COMPONENT SIDE)
S4 LIMITER ON OFF

【EQUALIZER BOARD】(COMPONENT SIDE)
CrO2
Fe-Cr
NORMAL
S3 TAPE SELECT

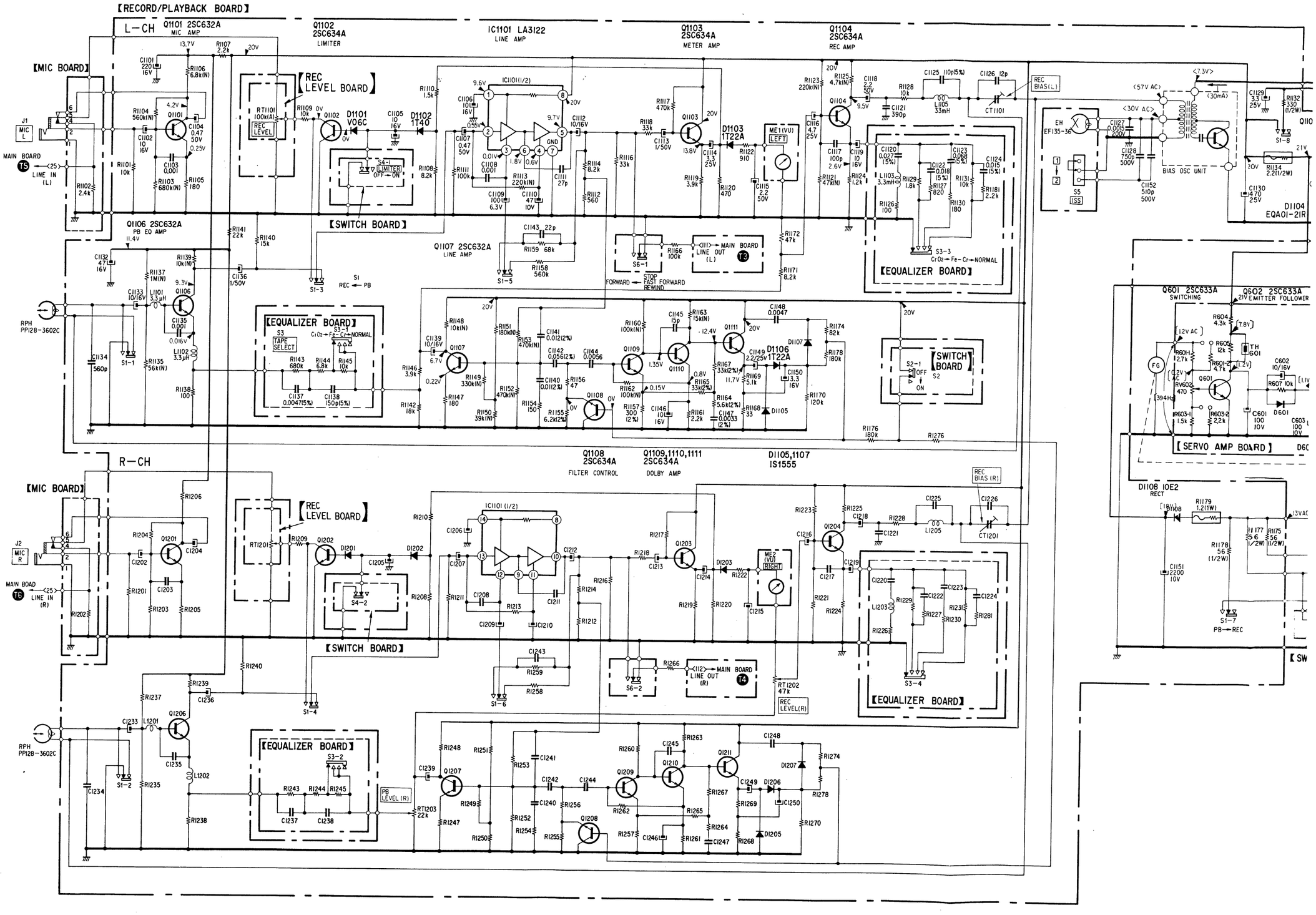
IC1101
7 GROUND

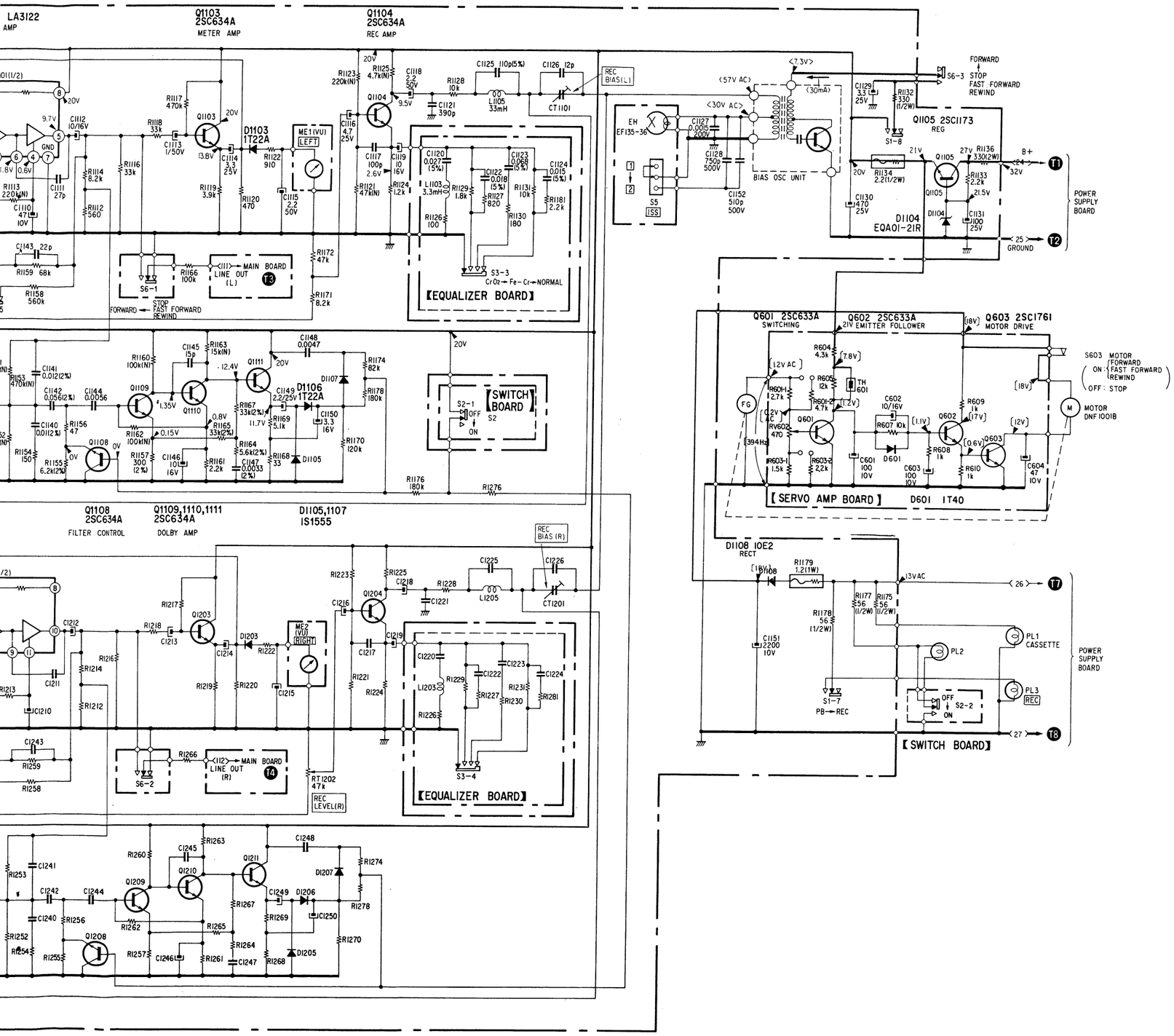
RPH
PP128-3602C
RECORD/
PLAYBACK HEAD
R-CH
L-CH

PLAYBACK
INPUT

REC LEVEL (R)
PB LEVEL (R)

4-3. SCHEMATIC DIAGRAM





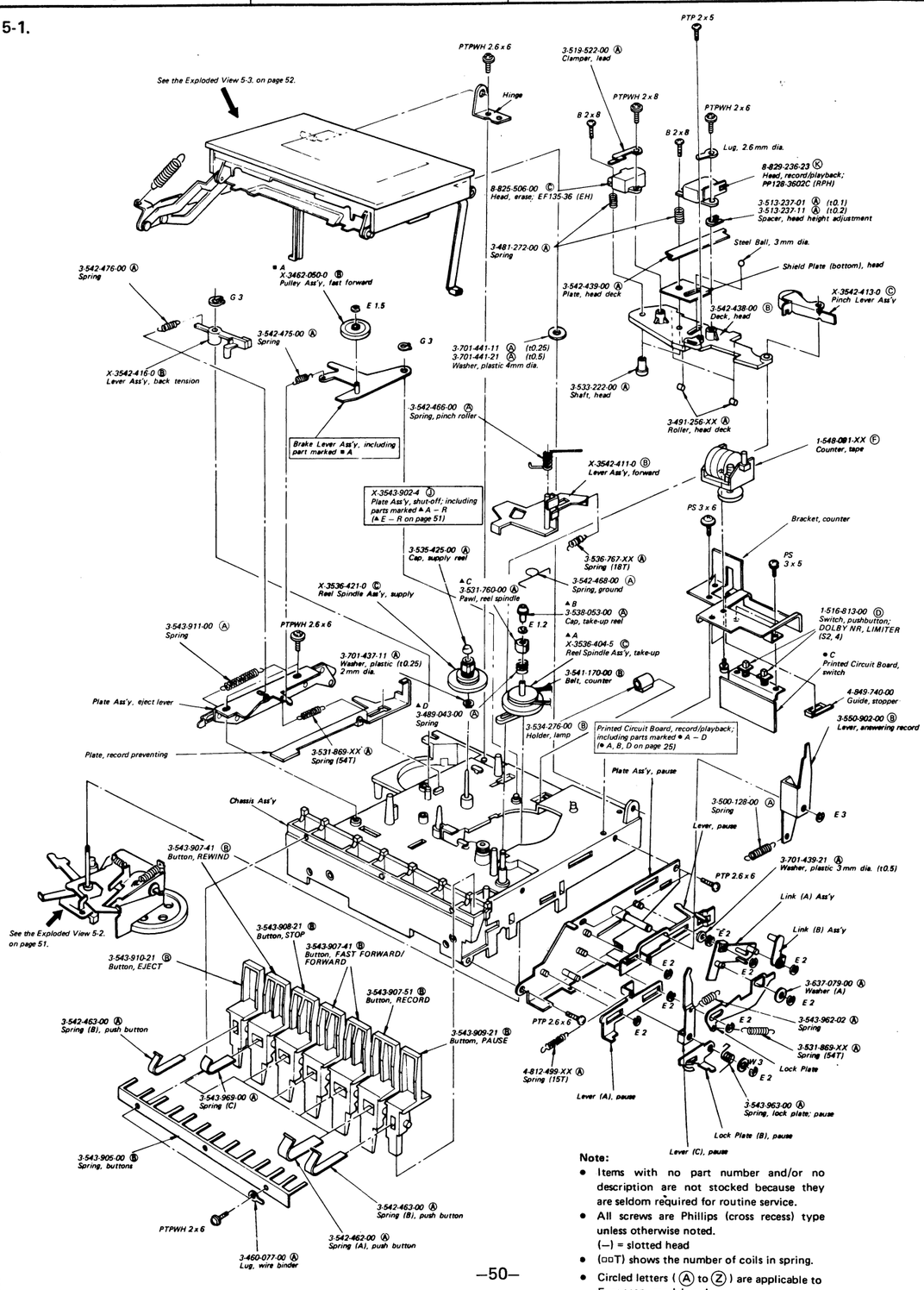
Note:

- Components for right channel have same values as for left channel.
- All capacitors are in μF unless otherwise noted. pF=μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000Ω, MΩ = 1000kΩ
- ⏦: fusible resistor.
- (N) : low-noise resistor.
- 2% or 5% indicates component tolerance.
- ——: B+ bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- PB: PLAYBACK
  REC: RECORD
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  ( ) : FORWARD
  < > : RECORD
  no mark: FM
- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref.	Switch	Postion
S1-1 to 1-8	RECORD/PLAYBACK	PLAYBACK
S2-1, 2	DOLBY NR	OFF
S3-1 to 3-4	TAPE SELECT	NORMAL
S4-1, 2	LIMITER	OFF
S5	ISS	1
		STOP
S6-1 to 6-3	TIMING	FAST FORWARD
		REWIND
S603	MOTOR	OFF

SECTION 5
EXPLODED VIEWS

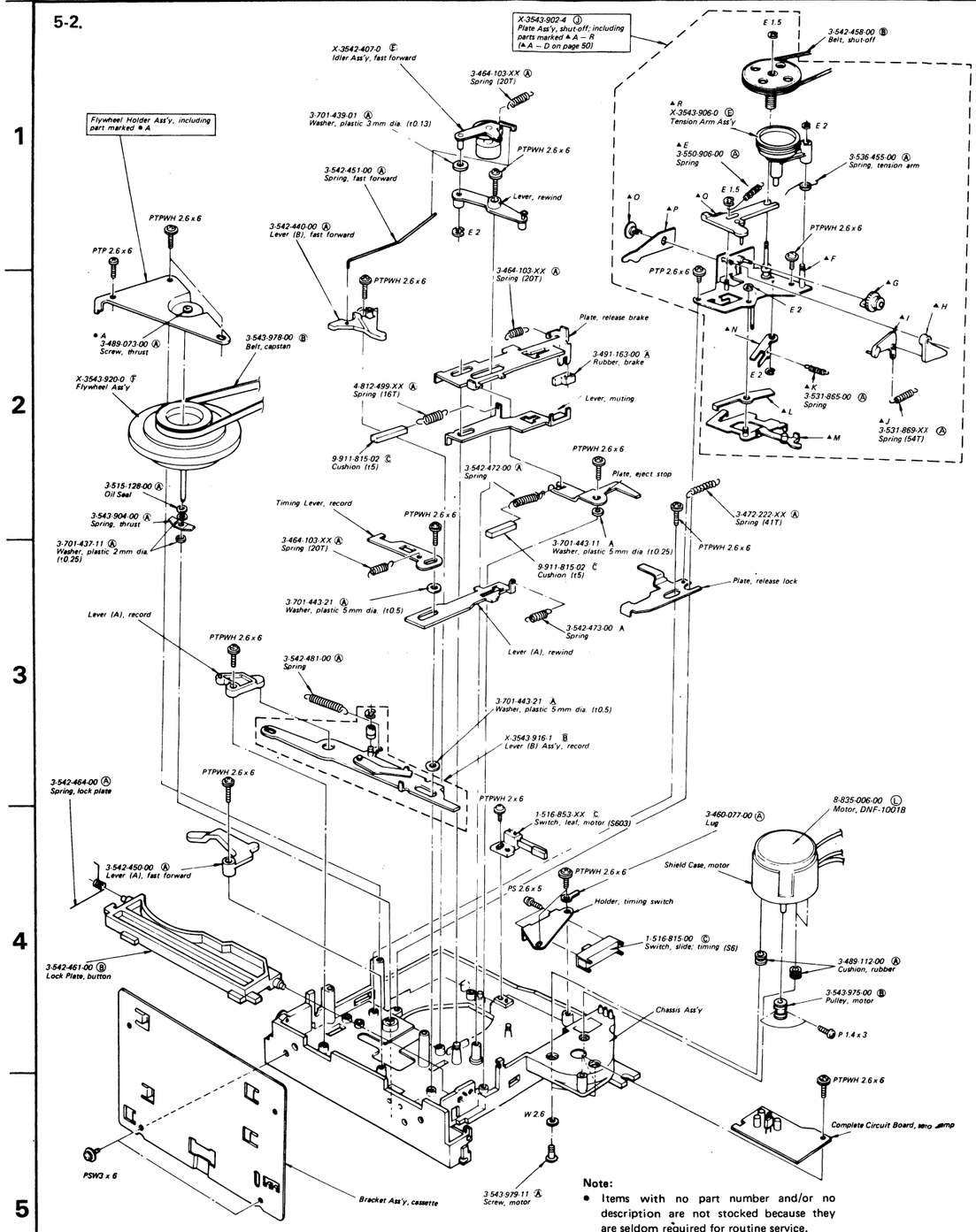
5-1.


See the Exploded View 5-3. on page 52.
PTPWH 2.6 x 6
Hinge
3-519-522-00 Ⓐ Clamper, lead
PTP 2 x 5
PTPWH 2 x 8
B 2 x 8
PTPWH 2 x 6
Lug, 2.6 mm dia.
8-829-236-23 Ⓚ Head, record/playback; PP128-3602C (RPH)
8-825-506-00 Ⓒ Head, erase; EF135-36 (EH)
3-513-237-01 Ⓐ (t0.1)
3-513-237-11 Ⓐ (t0.2)
Spacer, head height adjustment
3-481-272-00 Ⓐ Spring
Steel Ball, 3 mm dia.
Shield Plate (bottom), head
3-542-439-00 Ⓐ Plate, head deck
3-542-438-00 Ⓑ Deck, head
X-3542-413-0 Ⓒ Pinch Lever Ass'y
3-542-476-00 Ⓐ Spring
*A X-3462-050-0 Ⓑ Pulley Ass'y, fast forward
G 3
E 1.5
3-542-475-00 Ⓐ Spring
X-3542-416-0 Ⓑ Lever Ass'y, back tension
3-701-441-11 Ⓐ (t0.25)
3-701-441-21 Ⓐ (t0.5)
Washer, plastic 4 mm dia.
3-533-222-00 Ⓐ Shaft, head
3-491-256-XX Ⓐ Roller, head deck
Brake Lever Ass'y, including part marked *A
3-542-466-00 Ⓐ Spring, pinch roller
X-3542-411-0 Ⓑ Lever Ass'y, forward
1-548-091-XX Ⓕ Counter, tape
X-3543-902-4 Ⓙ Plate Ass'y, shut-off; including parts marked *A – R (*A E – R on page 51)
PS 3 x 6
Bracket, counter
3-535-425-00 Ⓐ Cap, supply reel
3-536-767-XX Ⓐ Spring (18T)
3-542-468-00 Ⓐ Spring, ground
PS 3 x 5
▲C 3-531-760-00 Ⓐ Pawl, reel spindle
X-3536-421-0 Ⓒ Reel Spindle Ass'y, supply
▲B 3-538-053-00 Ⓐ Cap, take-up reel
E 1.2
▲A X-3536-404-5 Ⓒ Reel Spindle Ass'y, take-up
3-541-170-00 Ⓑ Belt, counter
1-516-813-00 Ⓓ Switch, pushbutton; DOLBY NR, LIMITER (S2, 4)
*C Printed Circuit Board, switch
4-949-740-00 Guide, stopper
3-550-902-00 Ⓑ Lever, answering record
3-543-911-00 Ⓐ Spring
PTPWH 2.6 x 6
3-701-437-11 Ⓐ Washer, plastic (t0.25) 2 mm dia.
▲D 3-489-043-00 Ⓐ Spring
Plate Ass'y, eject lever
3-531-869-XX Ⓐ Spring (54T)
Plate, record preventing
3-534-276-00 Ⓑ Holder, lamp
Printed Circuit Board, record/playback; including parts marked * A – D (* A, B, D on page 25)
Plate Ass'y, pause
Chassis Ass'y
3-500-128-00 Ⓐ Spring
Lever, pause
E 3
3-543-907-41 Ⓑ Button, REWIND
3-701-439-21 Ⓐ Washer, plastic 3 mm dia. (t0.5)
PTP 2.6 x 6
Link (A) Ass'y
3-543-908-21 Ⓑ Button, STOP
3-543-907-41 Ⓑ Button, FAST FORWARD/ FORWARD
Link (B) Ass'y
E 2
3-543-910-21 Ⓑ Button, EJECT
3-637-079-00 Ⓐ Washer (A)
3-543-907-51 Ⓑ Button, RECORD
3-543-962-02 Ⓐ Spring
3-542-463-00 Ⓐ Spring (B), push button
3-543-909-21 Ⓑ Buttom, PAUSE
PTP 2.6 x 6
4-812-499-XX Ⓐ Spring (15T)
PW 3
Lock Plate
3-543-969-00 Ⓐ Spring (C)
Lever (A), pause
3-543-963-00 Ⓐ Spring, lock plate; pause
3-543-905-00 Ⓑ Spring, buttons
Lock Plate (B), pause
Lever (C), pause
3-542-463-00 Ⓐ Spring (B), push button
PTPWH 2.6 x 6
3-542-462-00 Ⓐ Spring (A), push button
3-460-077-00 Ⓐ Lug, wire binder
See the Exploded View 5-2. on page 51.

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

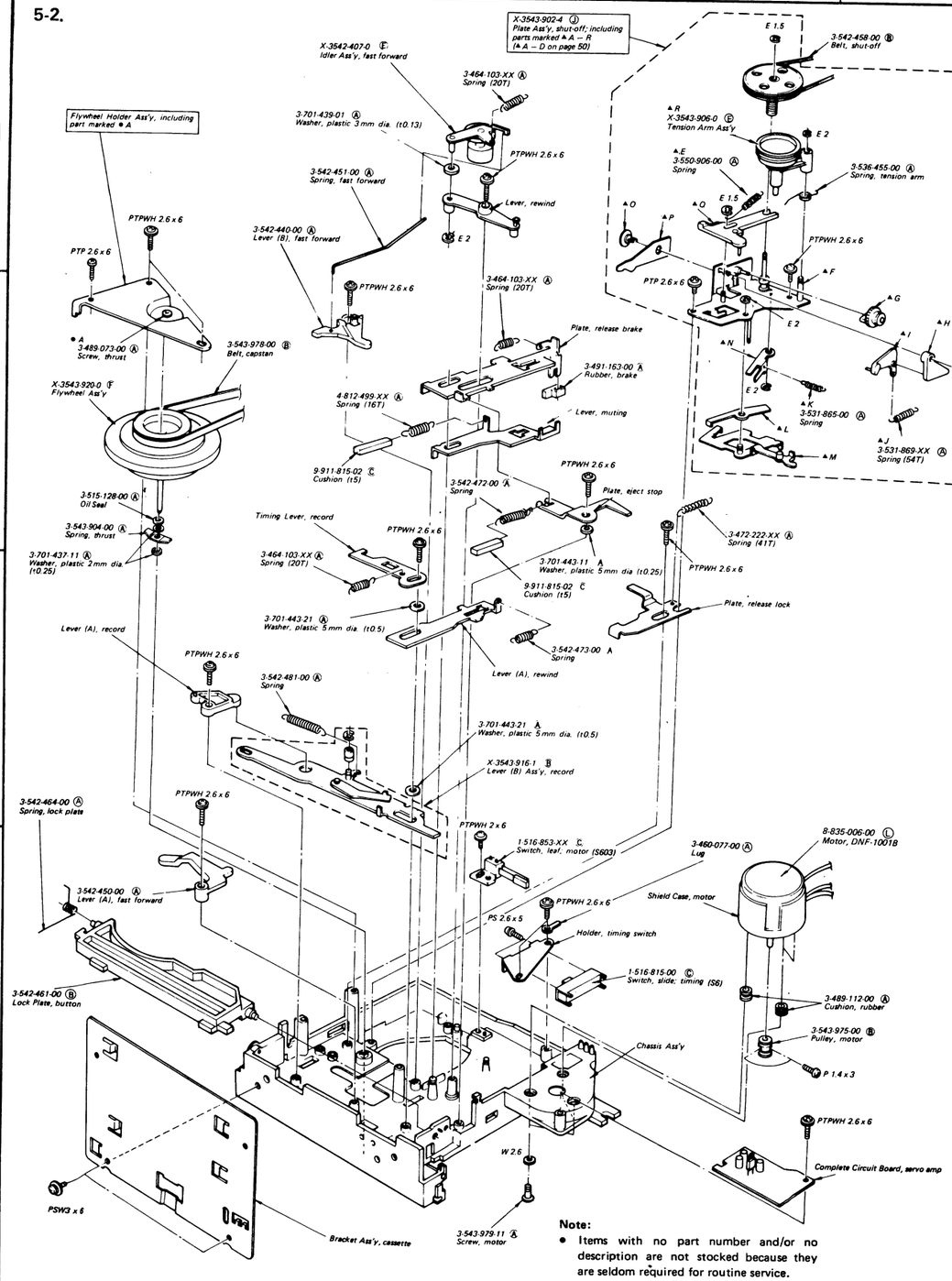
5-2.



Note:

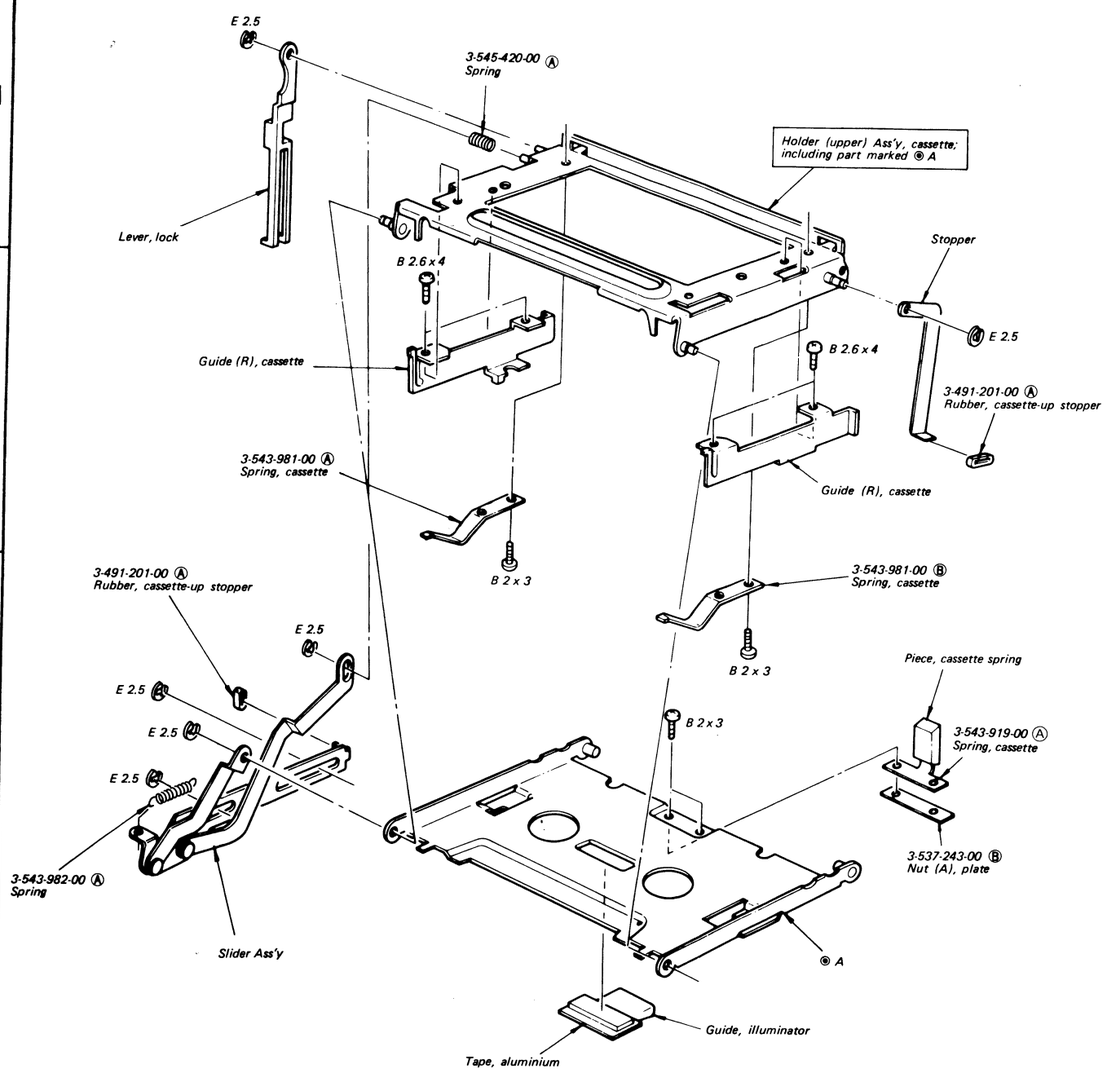
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

5-2.


X-3543-902-4 (J) Plate Ass'y, shut-off; including parts marked ▲A – R (▲A – D on page 50)
X-3542-407-0 (E) Idler Ass'y, fast forward
3-464-103-XX (A) Spring (20T)
3-701-439-01 (A) Washer, plastic 3mm dia. (t0.13)
PTPWH 2.6 x 6
3-542-451-00 (A) Spring, fast forward
Lever, rewind
E 2
3-542-440-00 (A) Lever (B), fast forward
PTPWH 2.6 x 6
3-464-103-XX (A) Spring (20T)
Plate, release brake
3-491-163-00 (A) Rubber, brake
4-812-499-XX (A) Spring (16T)
Lever, muting
9-911-815-02 (C) Cushion (t5)
3-542-472-00 (A) Spring
PTPWH 2.6 x 6
Plate, eject stop
Timing Lever, record
PTPWH 2.6 x 6
3-464-103-XX (A) Spring (20T)
3-701-443-11 (A) Washer, plastic 5mm dia (t0.25)
9-911-815-02 (C) Cushion (t5)
3-472-222-XX (A) Spring (41T)
PTPWH 2.6 x 6
Plate, release lock
3-701-443-21 (A) Washer, plastic 5mm dia. (t0.5)
3-542-473-00 (A) Spring
Lever (A), rewind
Flywheel Holder Ass'y, including part marked ● A
PTPWH 2.6 x 6
PTP 2.6 x 6
● A 3-489-073-00 (A) Screw, thrust
3-543-978-00 (B) Belt, capstan
X-3543-920-0 (F) Flywheel Ass'y
3-515-128-00 (A) Oil Seal
3-543-904-00 (A) Spring, thrust
3-701-437-11 (A) Washer, plastic 2mm dia. (t0.25)
Lever (A), record
PTPWH 2.6 x 6
3-542-481-00 (A) Spring
3-701-443-21 (A) Washer, plastic 5mm dia. (t0.5)
X-3543-916-1 (B) Lever (B) Ass'y, record
3-542-464-00 (A) Spring, lock plate
PTPWH 2.6 x 6
3-542-450-00 (A) Lever (A), fast forward
PTPWH 2 x 6
1-516-853-XX (C) Switch, leaf; motor (S603)
3-460-077-00 (A) Lug
8-835-006-00 (L) Motor, DNF-10018
Shield Case, motor
PTPWH 2.6 x 6
PS 2.6 x 5
Holder, timing switch
1-516-815-00 (C) Switch, slide; timing (S6)
3-542-461-00 (B) Lock Plate, button
3-489-112-00 (A) Cushion, rubber
3-543-975-00 (B) Pulley, motor
Chassis Ass'y
P 1.4 x 3
PTPWH 2.6 x 6
W 2.6
Complete Circuit Board, servo amp
PSW3 x 6
Bracket Ass'y, cassette
3-543-979-11 (A) Screw, motor
E 1.5
3-542-458-00 (B) Belt, shut-off
▲R X-3543-906-0 (E) Tension Arm Ass'y
E 2
▲E 3-550-906-00 (A) Spring
3-536-455-00 (A) Spring, tension arm
▲O ▲P ▲Q E 1.5
PTPWH 2.6 x 6
PTP 2.6 x 6
▲F ▲G ▲H ▲I
E 2
▲N
E 2
3-531-865-00 (A) Spring
▲K ▲L ▲M
▲J 3-531-869-XX (A) Spring (54T)

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters ((A) to (Z)) are applicable to European models only.

5-3.



Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters ((A) to (Z)) are applicable to European models only.

SECTION 6
ELECTRICAL PARTS LIST

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description
SEMICONDUCTORS		
Transistors		
⇒ Q1101,1201	8-729-665-47	Ⓑ 2SC1362
⇒ Q1102–1104, ⇒ Q1202–1204	8-729-663-47	Ⓑ 2SC1364
Q1105	8-729-217-33	Ⓒ 2SC1173
⇒ Q1106,1107, ⇒ Q1206,1207	8-729-665-47	Ⓑ 2SC1362
⇒ Q1108–1111, ⇒ Q1208–1211	8-729-663-47	Ⓑ 2SC1364
⇒ Q601,602	8-729-663-47	Ⓑ 2SC1364
Q603	8-763-113-00	Ⓒ 2SC1761
IC		
IC1101	8-759-831-22	Ⓔ LA3122
Diodes		
⇒ D601	8-719-815-55	Ⓑ 1S1555
⇒ D1101, 1201	8-719-900-93	Ⓑ VO9C
⇒ D1102,1202	8-719-815-55	Ⓑ 1S1555
⇒ D1103,1203	8-719-422-21	Ⓑ 1T22AM
⇒ D1104	8-719-931-21	Ⓑ EQB01-21
D1105,1205	8-719-815-55	Ⓑ 1S1555
⇒ D1106,1206	8-719-422-21	Ⓑ 1T22AM
D1107,1207	8-719-815-55	Ⓑ 1S1555
D1108	8-719-200-02	Ⓑ 10E2
Thermistor		
TH601	1-800-200-00	Ⓑ S-3K
COILS		
L1101,1201, L1102,1202	1-407-184-XX	Ⓐ Microinductor, 3.3μH
L1103,1203	1-407-200-XX	Ⓑ Microinductor, 3.3mH
L1105,1205	1-407-212-XX	Ⓑ Microinductor, 33mH

• ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref. No.	Part No.	Description		
CAPACITORS				
All capacitors are in μF and electrolytic unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalum.				
C601	1-121-414-11	Ⓐ 100	10V	
C602	1-121-651-11	Ⓐ 10	16V	
C603	1-121-414-11	Ⓐ 100	10V	
C604	1-121-409-11	Ⓐ 47	10V	
C1101	1-123-068-11	Ⓑ 220	16V	
C1102,1202	1-121-916-11	Ⓐ 10	16V	
C1103,1203	1-102-074-11	Ⓐ 0.001		ceramic
C1104,1204	1-121-726-11	Ⓐ 0.47	50V	
C1105,1205	1-121-651-11	Ⓐ 10	16V	
C1106,1206	1-121-651-11	Ⓐ 10	16V	
C1107,1207	1-121-726-11	Ⓐ 0.47	50V	
C1108,1208	1-102-074-11	Ⓐ 0.001		ceramic
C1109,1209	1-121-414-11	Ⓐ 100	6.3V	
C1110,1210	1-121-352-11	Ⓑ 47	10V	
C1111,1211	1-102-961-11	Ⓐ 27p		ceramic
C1112,1212	1-121-651-11	Ⓐ 10	16V	
C1113,1213	1-121-391-11	Ⓐ 1	50V	
C1114,1214	1-121-392-11	Ⓐ 3.3	25V	
C1115,1215	1-121-450-11	Ⓐ 2.2	50V	
C1116,1216	1-121-395-11	Ⓐ 4.7	25V	
C1117,1217	1-102-106-11	Ⓐ 100p		ceramic
C1118,1218	1-121-450-11	Ⓐ 2.2	50V	
C1119,1219	1-121-651-11	Ⓐ 10	16V	
C1120,1220	1-108-359-12	Ⓐ 0.027		mylar
C1121,1221	1-102-113-11	Ⓐ 390p		ceramic
C1122,1222	1-108-358-12	Ⓐ 0.018		mylar
C1123,1223	1-108-599-12	Ⓑ 0.068		mylar
C1124,1224	1-108-240-12	Ⓐ 0.015		mylar
C1125,1225	1-102-949-11	Ⓐ 110p		ceramic
C1126,1226	1-102-959-11	Ⓐ 12p		ceramic
C1127	1-108-411-12	Ⓑ 0.0015	200V	mylar
C1128	1-107-258-11	Ⓑ 750p	500V	silvered mica
C1129	1-121-392-11	Ⓐ 3.3	25V	
C1130	1-121-940-11	Ⓑ 470	25V	

HST-89A

CASSETTE RECORDER

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*		
C1131	1-121-416-11	Ⓑ 100	25V	
C1132	1-121-409-11	Ⓐ 47	16V	
C1133,1233	1-121-916-11	Ⓑ 10	16V	
C1134,1234	1-102-115-11	Ⓐ 560p		ceramic
C1135,1235	1-102-074-11	Ⓐ 0.001		ceramic
C1136,1236	1-121-391-11	Ⓐ 1	50V	
C1137,1237	1-108-234-12	Ⓐ 0.0047		mylar
C1138,1238	1-101-361-11	Ⓐ 150p		ceramic
C1139,1239	1-121-651-11	Ⓐ 10	16V	
C1140,1240	1-129-701-11	Ⓑ 0.01		polyethylene
C1141,1241	1-129-896-11	Ⓑ 0.012		polyethylene
C1142,1242	1-129-899-11	Ⓑ 0.056		polyethylene
C1143,1243	1-102-959-11	Ⓐ 22p		ceramic
C1144,1244	1-108-355-12	Ⓐ 0.0056		mylar
C1145,1245	1-102-956-11	Ⓐ 15p		ceramic
C1146,1246	1-121-651-11	Ⓐ 10	16V	
C1147,1247	1-129-794-11	Ⓑ 0.0033		polyethylene
C1148,1248	1-108-234-12	Ⓐ 0.0047		mylar
C1149,1249	1-131-205-11	Ⓑ 2.2	25V	tantalum
C1150,1250	1-131-197-11	Ⓑ 3.3	16V	tantalum
C1151	1-123-074-11	Ⓑ 2200	10V	
C1152	1-107-201-11	Ⓐ 510p	500V	silvered mica
CT101,1201	1-141-127-00	Ⓑ Trimmer		

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Check schematic diagram for values.

RV602	1-221-663-11	Ⓑ 2k-B, adjustable; tape speed			
R1132	1-102-561-11	Ⓐ 330	½W	composition
R1134	1-212-942-11	Ⓐ 2.2	½W	fusible
R1136	1-206-652-11	Ⓐ 330	2W	metal oxide
R1175,1177, R1178	1-202-543-11	Ⓐ 56	½W	composition
⇒ R1179	1-217-469-11	Ⓑ 1	1W	fusible
RT1101, RT1201	1-226-003-00	Ⓔ 100k-A, variable; REC LEVEL		
RT1202	1-224-647-XX	Ⓑ 47k-B, adjustable; REC LEVEL		
RT1203	1-224-646-XX	Ⓑ 22k-B, adjustable; PB LEVEL		

• ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref. No.	*Part No.*	*Description*
		SWITCHES
S1	1-514-976-XX	Ⓒ Slide, REC/PB
S2	1-516-813-00	Ⓓ Pushbutton, DOLBY NR
S3	1-552-076-00	Ⓒ Lever Slide, TAPE SELECT
S4	1-516-813-00	Ⓓ Pushbutton, LIMITER
S5	1-506-373-00	Ⓑ Short-plug, ISS
	1-551-093-00	Ⓒ Lead with connector, ISS
S6	1-516-815-00	Ⓒ Slide, timing
S603	1-516-853-XX	Ⓒ Leaf, motor
		MISCELLANEOUS
EH	8-825-506-00	Ⓒ Head, erase; EF135-36
J1, 2	1-507-490-00	Ⓑ Jack, MIC
M	8-835-006-00	Ⓛ Motor, DNF1001B
ME1, 2	1-520-283-00	Ⓗ Meter, VU
PL1–3	1-518-115-XX	Ⓑ Lamp, cassette; DOLBY NR, REC
RPH	8-829-236-23	Ⓚ Head, record/playback; PP128-3602C
	1-464-005-00	Ⓕ Unit, bias osc

Sony Corporation

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